Contrasting the Motivations of Using Social Networking Sites between Western and Eastern Countries

Yun-Shan Cheng¹, Yu-Chin Liu²

¹ School of Software & Internet of Things Engineering, Jiangxi University of Finance and Economics, China ² Department of Information Management, Shih Hsin University, Taiwan yunshancheng@gmail.com, ycliu@cc.shu.edu.tw

Abstract

As social networking sites have become more popular, numerous studies have investigated users' desired benefits and behaviors. However, to the best of our knowledge, no studies have systematically investigated the relations between desired benefits and goal values obtained from usage. Although social networking site use is a global phenomenon, few studies have compared the behaviors and desired benefits of users in different countries. This study attempts to address this gap through the following goals: (1) classify user motivations into value (high abstract level) and benefit (low abstract level) levels and systematically analyze the cognitive representation of relations among values, benefits, and attributes of social networking systems; (2) compare the differences between China, the United States and Taiwan and explain the differences found based on Eastern and Western perspectives.

Keywords: Mean-end chain theory, Social network sites, User behaviors, Values

1 Introduction

Social networking sites have flourished in recent years [1-4]. The United States alone has more than 150 million users [5], meaning that over 50% of Americans have a Facebook account. From its enormous user base, Facebook earned \$3.711 and \$5.089 billion in revenue in 2011 and 2012, respectively [6].

Although Facebook is the largest social networking site in the world, it has virtually no presence in China due to unresolved regulation and security issues [7]. However, some Chinese software companies have attempted to fill this vacancy with homegrown social networking sites such as Renren, which is considered to be "the most popular, most open, and best-financed" [8]. Renren is also considered to be the social networking site most similar to Facebook, and it has 162 million active users [9]. Moreover, Renren went public on the American stock market in 2011 and issued 740 million American Depositary Shares, raising US\$855 million from its initial public offering [10].

Not surprisingly, most social networking site users are located in the United States and China [11]. They present similar but distinct social networking interfaces and offer comparable yet distinct benefits and values. Comparisons of user behaviors on the two sites are of great interest to both academic and business communities. Due to the rise of social networking sites, numerous studies have investigated the determinants of social networking adoption, including various factors such as seeking information, passing time, and maintaining relationships [12-19]. However, these studies have paid only limited attention to the relationships between users' preferred attributes and motivations. Understanding such relationships can help determine why users appreciate certain attributes, and such knowledge can help us further improve the utility of existing social networking sites and aid in the development of new social networking sites. Furthermore, even though China and the United States house the largest numbers of social networking site users, to the best of our knowledge, no studies have compared the attributes and motivation relationships exhibited by people in these two regions.

The means-end chain (MEC) theory [20] is known for its ability to extract customers' rationales for purchasing or utilizing certain products or services. These rationales include attributes, motivations, and the relationships between them [20-34]. MEC has been used for many years by retail industries to explain consumer intentions. Recently, means-end chain theory has also been adapted to study why users play online games [35] and why they participate in online group shopping [36] and virtual worlds [37]. In light of this development, in this study, MEC is adopted to study the reasons why people utilize social network sites.

MEC theory is adopted in this study to establish the attributes and motivations of Chinese and American users to achieve the following goals:

(1) Identify the preferred attributes and link them to motivations.

^{*}Corresponding Author: Yun-Shan Cheng; E-mail: yunshancheng@gmail.com DOI: 10.3966/160792642019102006026

(2) Compare and contrast the behaviors of Chinese, Taiwanese and American users.

(3) Discuss the values users enjoy when utilizing social networking sites.

Determine whether regions rather than systems are the main factor causing different behaviors. In addition to collecting data from US and China, this study also collected and studied Taiwanese data. Taiwan's modern history has been deeply affected by the United States because the United States is Taiwan's largest economic partner [38]. However, although the Taiwanese share the same cultural heritage as the Chinese, the Taiwanese use only Facebook. Therefore, if system differences are the deciding factor, Taiwanese behaviors should be very similar to those of Americans. In contrast, if regions are the main factor causing the differences, Taiwanese behaviors should reflect both Chinese and American behaviors.

The remainder of this paper is organized as follows. Section 2 reviews the related literature and includes an investigation of the motivations and intentions behind social networking site use and an introduction to means-end chain theory. Section 3 describes the research methodology used, including our selection of interview subjects, interview procedures, coding procedures, reliability analysis methods, construction of implication matrices, and cut-off levels. Section 4 compares, contrasts, and discusses the representative relationships between the values, benefits, and attributes of social networking site users and elucidates the differences between Eastern and Western users. Section 5 presents the study's contributions and a conclusion. Finally, Section 6 presents avenues for future research.

2 Literature Review

2.1 Motivations behind Social Networking Site Use

With the proliferation of social networking site use in private life and organizational activities, considerable research has been devoted to investigating various aspects of user motivations and intentions. The aforementioned studies have identified different forms of user motivations on a macro level. The most frequently mentioned motivations include searching for relevant information and learning new information via social networking sites [12-14, 16-17, 39-40]. Passing time refers to users spending leisure time on social networking sites [12, 14-15, 18-19]. Relationship maintenance refers to users keeping in touch with friends or establishing connections with other people [14, 17-19, 40]. Seeking entertainment is a common benefit enjoyed by most social networking site users [12-19, 40]. Seeking friends refers to users seeking someone out to become a friend through social

networking sites [12-13, 16-19]. Connecting with friends refers to the act of communicating and maintaining contact with friends on social networking sites [12-13, 15, 17].

Even though several motivations have been identified, these studies do not identify all the possible motivations or favorite attributes and do not link software attributes with motivations. The present study strives to close this gap and to compare and contrast findings for Chinese, American and Taiwanese users.

2.2 Means-end Chain Theory

In [20], the means-end chain theory was introduced to marketing and consumer research as a means of clarifying consumer cognitive networks related to consumption behaviors. The means-end chain theory involves three levels: attributes, consequences, and values. The means-end chain begins with the "means" (as attributes) and links to the "end" (as values) through the perceived benefits (as consequences). Attributes are the product or service characteristics that consumers prefer or seek [20, 41]. In the software business, attributes refer to features that attract usage. For example, one attribute of gaming software is multiplayer games [35]. This study defines features on a smaller scale and refers to the actual functions of social networking sites such as "Post" and "Share links." However, consumers who purchase a product or use a service typically think at higher levels of abstraction (consequences or values). Consequences have been defined differently in various studies. Among them, consequences frequently refer to benefits [20, 35, 37, 41-44] that cause people to seek certain attributes [45]. Values represent the ultimate benefits for consumers and play a dominant role in guiding them to seek preferred attributes from a product or service [20, 41]. Values can be measured using three vehicles: the Rokeach Value Survey (RVS) [46], Values and Life Style (VALS) segmentation [47], and the List of Values (LOV) [48]. Among them, the LOV is the most popular vehicle used in marketing studies [49-51]. The LOV is based on nine core values: a sense of belonging, excitement, warm relationships with others, self-fulfillment, being highly respected, fun and enjoyment in life, security, self-respect, and a sense of accomplishment.

The means-end chain has also been used recently to analyze Internet user behaviors and determine consumer attributes, benefits, and values for online group shopping [36], living in social virtual worlds [37], and playing MMORPGs [35].

3 Methodology

3.1 Research Subjects

The survey was administered to 60 social

networking site users equally divided among the three nationalities of Taiwan, the United States, and China. The interviewees were frequent users of Facebook or Renren. Volunteers were selected from a group of undergraduate and graduate students who had used Facebook or Renren for more than 4 years. The genders of the interviewees were also equally split; their ages ranged from 18 to 35 years, which is consistent with statistics published by Facebook [5]. In China, most Renren users are 19 to 25 years of age [52]. A soft laddering approach was adopted to collect data based on the MEC, which treats functions provided by social networking sites as attributes. Each participant was compensated with NT\$150.

3.2 The In-depth Interview Procedure

The interviewees were solicited for answers to the following three types of questions related to usage behaviors on social networking sites: (1) "What functions attract you to use social networking sites?" (2) "Why are these functions important to you and what benefits do you gain from using these functions?" and (3) "Why are these benefits important to you?" Interviewees were asked to consider functions that attracted them to use social networking sites. For each function, the benefit derived from a function was determined. For each benefit, a reason "why the benefit was considered important" was requested. The benefit investigation process proceeded until the interviewees were unable to provide additional explanations or until one of the values listed in the LOV was determined.

3.3 Coding and Reliability

The goal of coding is to identify groups of elements from in-depth interviews via content analysis and the laddering technique [53]. Three experienced social networking site users familiar with the MEC approach and who had spent more than 6 hours per day on social networking sites for 5 years were invited to perform the coding tasks.

Before starting the coding process, the interview records were reviewed to collect elements of attributes, benefits, and values. The number of preferred attributes found in surveys conducted with the American, Taiwanese, and Chinese users was 14, 14, and 14; the number of benefits was 19, 17, and 17; and the number of goal values was 3, 4, and 5, respectively.

During the coding process, attributes and values were assigned first because the attributes are functional buttons on social networking sites and are easily identified (e.g., "post" and "newsfeed"). Moreover, the values are listed in the LOV [48]. These nine elements are self-respect, being respected, self-fulfillment, sense of belonging, excitement, fun and enjoyment in life, warm relationships with others, a sense of accomplishment, and security. After assigning the attributes and values, the attained benefits were coded.

The interjudge reliability approach [54] was applied to verify the reliability of the content analysis. The intercoder reliabilities found (0.94, 0.90, and 0.89) are higher than the recommended thresholds (0.7 or 0.85) [55-56].

3.4 Determining Cut-off Levels and Constructing Hierarchical Value Maps

An appropriate cut-off level must be determined because the same implication matrix with different cutoff levels produces different hierarchical value maps. A low cut-off level results in a complex hierarchical value map and reduces the utility and informational value of the map. However, a high cut-off value results in an overly simplified hierarchical value map that loses too much critical information [53].

Thus, to determine a suitable cut-off level, we adopted the approaches developed by [53, 57-58]. Other studies have also used these approaches [35, 37, 58-59], which are based on means—end chains. The authors of [53] posited that cut-off levels can be 3, 4, or 5 when sample sizes range between 50 and 60. Furthermore, [57] recommended choosing a cut-off level to balance a "low percentage of active cells" with a "high percentage of active linkages." Table 1 shows the percentage of active linkages and active cells when using cut-off values of 3, 4, and 5 for the collected samples.

Table 1. Statistics for determine	ning a cu	t-off level
-----------------------------------	-----------	-------------

Country	Cut-off	Number of active linkages	% active linkages	Number of active cells	% active cells
United States/Taiwan/China	5	320/253/379	72.6/51.5/86.9	34/23/38	34.3/14.2/57.6
United States/Taiwan/China	4	344/317/391	77.9/64.5/89.6	40/39/41	40.4/24.2/62.1
United States/Taiwan/China	3	389/347/406	87.9/70.6/93.1	55/49/46	55.5/30.4/69.7

When the cut-off level is set to 3 or 4, the active linkages for all user groups exceed 60%, whereas the active linkages drop to 51.5% when the cut-off level is set to 5. However, according to [58], the percentage of

active linkages should not be less than 60% of all linkages when the samples are separated into multiple groups [35, 37, 58]. Thus, the cut-off level in this study was set to 4 because its percentage of active cells is

lower than the cut-off level of 3 for all countries.

A sensitivity analysis was conducted to investigate whether 20 samples from each country was an appropriate size. Sizes of 16, 18, and 20 were studied. Table 2 shows that the active linkage percentages were

Table 2.	Sensitivity	analysis.
----------	-------------	-----------

fairly stable for sample sizes of 18 and 20 when the cut-off level was set to 4. A size of 20 was also recommended as an appropriate sample size for soft laddering by the authors of [60] and has been adopted in several studies [58, 61-62].

Sample size	Country	Cut-off	Number of active linkages	% active linkages	Number of active cells	% active cells
16	United States/Taiwan/China	4	291/271/319	74.4/59.7/87.2	35/32/38	38.5/20.5/60.3
18	United States/Taiwan/China	4	312/299/349	75.0/63.2/89.0	36/36/40	36.7/22.9/63.5
20	United States/Taiwan/China	4	344/317/391	77.9/64.5/89.6	40/39/41	40.4/24.2/62.1

4 Findings and Discussion

4.1 Cross Country Relations and Elements

Figure 1, Figure 2 and Figure 3 show the hierarchical value maps for American, Taiwanese and Chinese users, respectively. In these figures, values,

benefits, and attributes are represented by hexagons, rectangles, and ovals, respectively. The number between two elements denotes the number of times the relation was mentioned in the interviews. For example, in Figure 1, the relation between "Games (A)" and "Kill time (B)" was mentioned seven times by the American users.

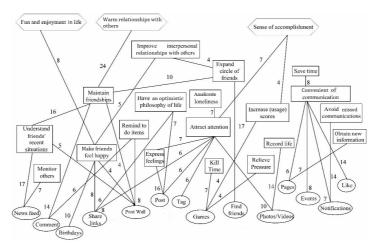


Figure 1. Hierarchical value map for American users

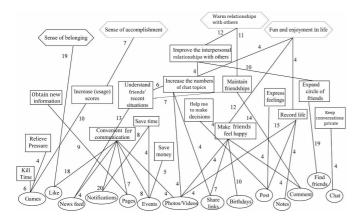


Figure 2. Hierarchical value map for Taiwanese users

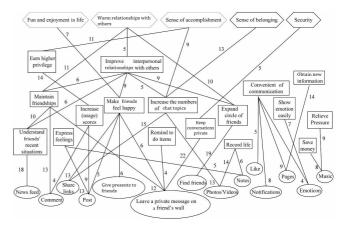


Figure 3. Hierarchical value map for Chinese users

The figures show that ten common relations are shared by the three regions. The related details are discussed in next subsection. In addition to these commonalities, the figures show that each region possesses its own special features. Both the American and Chinese users exhibit six unique elements, while Taiwanese users show only two unique elements.

Interestingly but not surprisingly, users in Taiwan share the highest number of common preferences with Chinese and American users. In addition to the ten common relations, Taiwanese users share another 5 relations with American users and 3 relations and 2 elements with Chinese users. However, Chinese and American users do not share any additional preferences when Taiwanese users are not considered. The finding that Taiwanese user behaviors represent a combination of Eastern and Western traits reveals that the differences between user behaviors result primarily from regions rather than from systems because the Taiwanese and American users both use Facebook, while the Chinese users use Renren.

4.2 Common Relations among Values, Benefits, and Attributes

Table 3 shows the common relations shared by all users. These results echo the findings of [14, 17-18], and [19]— that the primary motivation for using social networking sites is to maintain friendships. This study further extends the findings of those previous works by identifying the value of warm relationships with others as an abstract motivation for maintaining friendships, which is also the most popular value for users of all three regions and can be derived from the benefits of understanding friends' recent situations by using comments or newsfeeds.

Table 3. Common relations among American,Taiwanese, and Chinese users.

Warm relationships with others(V)–Maintaining friendships(B)–Comment(A)
Warm relationships with others(V)–Maintaining friendships(B)–Understanding friends' recent situations(B)–Newsfeed(A)
Fun and enjoyment in life(V)–Making friends feel happy(B)–Share links(A)
Improving interpersonal relationships with others(B)– Expanding circle of friends (B)–Find friends(A)
Obtaining new information(B)-Pages(A)
Expressing feelings(B)–Post(A)
Convenient for communication(B)-Notifications(A)
Convenient for communication(B)–Like(A)
Convenient for communication(B)-Pages(A)
Recording life(B)- Photos/Videos(A)

"Fun and enjoyment in life" is another popular value for all the users that can be derived from the benefits of "making friends feel happy" by using "shared links". However, "making friends feel happy" can also be viewed as a form of altruism [63] that could be related to the value of "fun and enjoyment in life". Moreover, Table 3 shows that users make their friends happy by using "share links". During the interviews, interviewees frequently mentioned sharing links to funny, interesting, or meaningful videos on social networking sites.

Many previous studies have shown that "information seeking" is a popular activity on social networking sites [12-14, 16-17, 64]. The present study confirms this phenomenon and shows that the primary channel for seeking information on social networking sites is pages: users believe that pages serve as an efficient avenue for receiving interesting information.

Many interviewees mentioned using the "post" attribute to write negative messages on a newsfeed to express feelings such as complaints about work environments. Humans sometimes gain a sense of fulfillment or comfort by performing pain-induced behaviors (e.g., complaining).

three most The popular convenient and communication attributes used by all of the users were "notifications", "pages" and "likes". For these attributes, users need to click only one button, allowing them to check or comment on all messages from other users without cumbersome procedures. In addition, people commonly record their lives using the photo/video attribute. As smart phones have become the most popular consumer electronic device [65], people can easily acquire digital photographs or videos to record their lives.

4.3 Commonalities between American and Taiwanese Users

Although Figures 1 and 2 show that "fun and enjoyment in life" is one of the most popular values mentioned in this survey, it is associated with "birthday" only for American and Taiwanese users (Table 4). This attribute serves as a unified interface both for reminding users that their friends' birthdays are approaching and for dispatching celebration messages to friends. The senders believe that these messages make the receivers happy, and this altruism enhances the sense of fun and enjoyment in life for the senders.

 Table 4. Relations that American and Taiwan users share

Fun and enjoyment in life (V)-Making friends feel				
happy (B)-Birthday (A)				
Sense of accomplishment (V)-Increasing (usage) scores				
(B)-Games (A)				
Killing time (B)-Games (A)				
Relieving pressure (B)-Games (A)				
Saving time (B)-Events (A)				

The other shared value was "a sense of accomplishment" derived from the benefit of "increasing (usage) scores" by "playing games". In social networking site games, the higher a player's scores are, the higher that player's status is. The game attribute is also associated with benefits of killing time and relieving pressure. Thus, killing time has also been identified as a critical motivation for gaming on social networking sites. American users prefer to choose games such as Candy Crush because they are easy to play on Facebook.

Moreover, users in both the United States and Taiwan enjoy the benefit of "saving time" by using "events". "Events" allow users to create event invitations that are open to the public or to select friends. Thus, "Events" is a useful attribute that makes it convenient to invite people to discuss the time and location of a party on an event page and saves time otherwise spent on relaying and sending messages.

4.4 Commonalities between Chinese and Taiwanese Users

From the relations listed in Table 5, both Chinese and Taiwanese users enjoy improving their interpersonal relationships with others by increasing the number of chat topics used through share links and photos/videos. Taiwanese users prefer to share selfies and chat with friends, while Chinese users prefer to post scenic photos because posting such photos confers "hipster" qualities. The Chinese users also prefer to spend more time discussing politics or social issues on social networking sites.

Table 5. Relations or special benefits that Chinese andTaiwan users share

Improving interpersonal relationships with others (B) – Increasing the number of chat topics (B) – Share links (A)

Improving interpersonal relationships with others (B) – Increasing the number of chat topics (B) – Photos/Videos (A)

Recording life (B) – Notes (A)

Keeping conversations private (B)

```
Saving money (B)
```

In addition, Chinese and Taiwanese users care about keeping conversations private [66]; they are shy compared to Americans, and Chinese users are particularly sensitive to Internet censoring. Chinese users prefer to anonymously, pseudonymously or privately use the "leave a private message" on a friend's wall attribute to keep their conversations private and avoid government censorship. In contrast, Taiwanese users prefer to use the chat attribute because it serves as a real-time private message-exchange channel between users. Another attribute widely appreciated by both parties is "notes", which is related to the benefit of "recording life". Although social networking site users generally use "photos/videos" to record their lives, this relation also implies that Chinese and Taiwanese users are more adept at using words to record their lives than are their American counterparts. Some part of the Chinese users are required to be adept at using words to record their lives because the Internet speeds in some rural areas are unstable.

The element of "saving money" is shared by users in both Taiwan and China—albeit for different reasons. Taiwanese users prefer to use the events attribute to save money because an event can be used to notify and communicate with multiple friends without paying mobile communication fees. In contrast, most Chinese users prefer to use music to save money because they can listen to music on Renren without paying any fees.

4.5 Unique Elements for Each Country

The number of unique elements for user values, benefits, and attributes among the three user groups differs slightly. American and Chinese users exhibit six unique elements, but Taiwanese users exhibit only two. The findings again show that Taiwanese user behaviors combine patterns from Eastern and Western regions.

4.5.1 American Uniqueness

The six unique elements crucial to American users are "having an optimistic philosophy life", "monitoring others", "avoiding missed communications", "ameliorating loneliness", "attracting attention", and "tags".

American users of social networking sites often share or post Bible verses for self-encouragement or to transmit their optimistic philosophy on life to their friends. American users typically use "newsfeeds" to track people on social networking sites. American users earn the benefit of "attracting attention" by using "share links", "posts", "tags", and "photos/videos", which relate to the value of "sense of accomplishment" "attracting others' attention". Among these bv attributes, "tags" are preferred by American users. They commonly use tags to remind people and create links. For example, when someone is tagged, he (or she) will receive a message concerning photos, videos, status updates, and notes that person has been referenced in. Using the tag attribute, users can attract attention to alleviate their feelings of loneliness. In addition to tags, the notification attribute benefits users by preventing missed communications while limiting information and message loss with friends. A minor negative comment of notification drawn from interviewees is that the notification information also includes some unwanted messages such as game advertisements.

4.5.2 Taiwanese Uniqueness

Because the chat attribute was discussed in the previous section, the rest of this paragraph reviews the remaining element. "Helping me make decisions" is considered a critical benefit by the Taiwanese users, who solicit comments and opinions on complex questions ranging from serious issues "Should I work after graduation or pursue further education?" to trivial questions such as "What should I eat for breakfast?" This behavior is not shared by the users in the other two regions.

4.5.3 Chinese Uniqueness

The elements preferred by Chinese users are emoticons, music, giving presents to friends, earning higher privileges, showing emotion easily, and security.

On Renren, Chinese users can use emoticons to express their feelings. Gift-giving between friends is a fundamental Chinese tradition. Confucius once remarked "From the man bringing his bundle of dried flesh for my teaching upwards, I have never refused instruction to anyone" [67]. Chinese users can send virtual presents, such as virtual cakes or a personal page decorated with pictures to friends on Renren through a built-in "give presents to my friends" function. This attribute is related to values of fun and enjoyment in life and warm relationships with others.

Unlike American and Taiwanese users, Chinese users benefit by "earning higher privileges" through "increased (usage) scores" via "posts" and "comments". When users post or comment on messages, they increase their (usage) scores and thus earn more privileges. Users can trade scores for ornaments that they can use to customize or establish their personal pages. In addition, Chinese users wish to earn the value of security by keeping their conversations private on social networking sites because the Chinese government closely monitors content published on the Internet.

5 Conclusions

Although studies on the motivations behind social networking site use are common, this study is the first to systematically investigate users' cognitive representations of the relations in social networking sites. This study identified five values (warm relationships with others, a sense of belonging, security, a sense of accomplishment, and fun and enjoyment in life). The most popular value is warm relationships with others, and it is related to two attributescomments and newsfeeds. The study identified 20 attributes that attract users. However, attribute popularity varies by region. For American users, the most popular attributes are "newsfeeds" and "photos/videos". For Taiwanese users, the most

popular attribute is "like" and for Chinese users, the most popular attribute is "leave a private message" on a friend's wall.

This study is also the first to adopt means-end chain theory to investigate the behavioral differences between Chinese, Taiwanese and American users. For Chinese users, the preferred values, benefits, and attributes include "emoticons", "music", "giving presents to friends", "earning higher privileges", "showing emotion easily", and "security". For American users, the preferred benefits and attributes are "having an optimistic philosophy of life", "monitoring others", "avoiding missed communications", ameliorating loneliness, "attracting attention", and "tag". For Taiwanese users, the preferred benefits and attributes are "helping me make decisions" and "chat". Thus, we suggest that entrepreneurs operating social companies and networking sites apply these values, benefits, and attributes to improve their services or to design new functions to attract various users. After identifying the values and benefits that users seek, social networking site operators can use that knowledge to create attributes and to improve the utility of their sites.

This study identified ten relations shared by users in all three studied countries. In addition to these common relations, users in Taiwan share another 5 relations with American users and 3 relations and 2 elements with Chinese users. Interestingly, the American and Chinese users do not share any additional common relations when the Taiwanese users are not considered. The finding suggests that the reasons for the different user behavior between China and United States may be regional rather than stemming from differences in the networking sites themselves.

6 Limitations and Future Work

This study investigated the relations and elements among values, benefits, and preferred attributes for the most popular social networking sites of Eastern and Western countries, namely, Renren and Facebook. Other popular social networking sites such as Google+ and MySpace were omitted from this study. Thus, our research results may not reflect the behaviors of all social networking site users.

This finding suggests that future studies on motivations behind social network site adoption may consider the attributes, benefits and values listed in Appendix 1. These benefits and values should have positive effects on attributes and on intentions to use social networking sites. Future work could verify whether the values are determining factors of the benefits identified through social networking site adoption studies.

References

- E. W. T. Ngai, K.-I. K. Moon, S. S. Lam, E. S. K. Chin, S. S. C. Tao, Social Media Models, Technologies, and Applications: An Academic Review and Case Study, *Industrial Management & Data Systems*, Vol. 115, No. 5, pp.769-802, April, 2015.
- [2] H. Lee, J. Choi, K. K. Kim, A. R. Lee, Impact of Anonymity on Information Sharing through Internal Psychological Processes: A Case of South Korean Online Communities, *Journal of Global Information Management*, Vol. 22, No. 3, pp. 57-77, September, 2014.
- [3] S. T. Yuce, N. Agarwal, R. T. Wigand, M. Lim, R. S. Robinson, Bridging Women Rights Networks: Analyzing Interconnected Online Collective Actions, *Journal of Global Information Management*, Vol. 22, No. 4, pp. 1-20, December, 2014.
- [4] Y. W. Zhao, W.-J. van den Heuvel, X. Ye, A Framework for Multi-Faceted Analytics of User Behaviors in Social Networks, *Journal of Internet Technology*, Vol. 15, No. 6, pp. 985-994, November, 2014.
- [5] Check Facebook. November, http://www.socialbakers.com/facebook-overview-statistics/
- [6] AOL Inc., http://www.engadget.com/2013/01/30/facebook-2012-q4-earnings/.
- [7] *Taiwan News*, http://taiwannews.com.tw/etn/news content.php?id=1312597&lang=engnews777.
- [8] K. Lukoff, China's Top Four Social Networks: RenRen, Kaixin001, Qzone, and 51.Com., http://venturebeat.com/2010/04/07/china%E2%80%99s-top-4-social-networks-renren-kaixin001-qzone-and-51-com.
- Chineseworldnet.com Inc., http://www.chineseworldnet.com/na/stock/chinaConceptStoc kGroup/stock comment cn/2650302.
- [10] WIRED, http://www.wired.com/business/2011/05/renren/.
- [11] eMarketer, http://www.emarketer.com/Article/Social-Networking-Reaches-Nearly-One-Four-Around-World/1009976.
- [12] P. B. Brandtzæg, J, Heim, Why People Use Social Networking Sites, Springer, 2009.
- [13] Y. P. Chang, D. H. Zhu, Understanding Social Networking Sites Adoption in China: A Comparison of Pre-adoption and Post-adoption, *Computers in Human Behavior*, Vol. 27, No. 5, pp. 1840-1848, September, 2011.
- B. Gülnar, Ş. Balcı, V. Çakır, Motivations of Facebook, You Tube and Similar Web Sites Users, *Bilig*, Vol. 54, No. 54, pp. 161-184, June, 2010.
- [15] T. Jung, H. Youn, S. McClung, Motivations and Selfpresentation Strategies on Korean-based "Cyworld" Weblog Format Personal Homepages, *Cyberpsychology & Behavior*, Vol. 10, No. 1, pp. 24-31, February, 2007.
- [16] Y. Kim, D. Sohn, S. M. Choi, Cultural Difference in Motivations for using Social Network Sites: A Comparative Study of American and Korean College Students, *Computers in Human Behavior*, Vol. 27, No. 1, pp. 365-372, January, 2011.

- [17] C. D. Schaefer, Motivations and Usage Patterns on Social Network Sites, Proceedings of the 16th European Conference on Information Systems, Galway, Ireland, 2008, pp. 2088-2099
- [18] P. Sheldon, The Relationship Between Unwillingness-to-Communicate and Students' Facebook Use, *Journal of Media Psychology: Theories, Methods, and Applications*, Vol. 20, No. 2, pp. 67-75, May, 2008.
- [19] W. P. Special, K. T. Li-Barber, Self-disclosure and Student Satisfaction with Facebook, *Computers in Human Behavior*, Vol. 28, No. 2, pp. 624-630, March, 2012.
- [20] J. Gutman, A Means-End Chain Model Based on Consumer Categorization Processes, *Journal of Marketing*, Vol. 46, No. 2, pp. 60-72, Spring, 1982.
- [21] V. Barker, Older Adolescents' Motivations for Social Network Site Use: The Influence of Gender, Group Identity, and Collective Self-Esteem, *Cyberpsychology & Behavior*, Vol. 12, No. 2, pp. 209-213, April, 2009.
- [22] J. Choi, L. V. Geistfeld, A Cross-cultural Investigation of Consumer E-shopping Adoption, *Journal of Economic Psychology*, Vol. 25, No. 6, pp. 821-838, December, 2004.
- [23] D. Cyr, M. Head, H. Larios, Colour Appeal in Website Design within and Across Cultures: A Multi-Method Evaluation, *International Journal of Human-Computer Studies*, Vol. 68, No. 1-2, pp. 1-21, January-February, 2010.
- [24] B. Endrass, M. Rehm, E. André, Planning Small Talk Behavior with Cultural Influences for Multiagent Systems, *Computer Speech & Language*, Vol. 25, No. 2, pp. 158-174, April, 2011.
- [25] R. Gelbard, A. Carmeli, R. M. Bittmann, S. Ronen, Cluster Analysis using Multi-Algorithm Voting in Cross-cultural Studies, *Expert Systems with Applications*, Vol. 36, No. 7, pp. 10438-10446, September, 2009.
- [26] M. A. Goldenberg, D. Klenosky, J. T. O'Leary, T. J. Templin, A Means-End Investigation of Ropes Course Experiences, *Journal of Leisure Research*, Vol. 32, No. 2, pp. 208-224, December, 2000.
- [27] G. Hofstede, G. J. Hofstede, M. Minkov, *Cultures and Organizations: Software of the Mind*, McGraw-Hill, 1991.
- [28] M. R. Jalilvand, S. S. Esfahani, N. Samiei, Electronic Wordof-Mouth: Challenges and Opportunities, *Procedia Computer Science*, Vol. 3, pp. 42-46, December, 2011.
- [29] D. B. Klenosky, The "Pull" of Tourism Destinations: A Means-end Investigation, *Journal of Travel Research*, Vol. 40, No. 4, pp. 396-403, May, 2002.
- [30] D. E. Leidner, Globalization, Culture, and Information: Towards Global Knowledge Transparency, *The Journal of Strategic Information Systems*, Vol. 19, No. 2, pp. 69-77, June, 2010.
- [31] K.-Y. Lin, H.-P. Lu, Why People use Social Networking Sites: An Empirical Study Integrating Network Externalities and Motivation Theory, *Computers in Human Behavior*, Vol. 27, No. 3, pp. 1152-1161, May, 2011.
- [32] Y. N. Moradabadi, M. A. Gharehshiran, K. Amrai, What is the Motivation Student of Iranians for using Facebook?, *Procedia-Social and Behavioral Sciences*, Vol. 46, pp. 5192-

5195, 2012.

- [33] M. Srite, E. Karahanna, The Role of Espoused National Cultural Values in Technology Acceptance, *MIS Quarterly*, Vol. 30, No. 3, pp. 79-704, September, 2006.
- [34] C. Yoon, The Effects of National Culture Values on Consumer Acceptance of E-commerce: Online Shoppers in China, *Information & Management*, Vol. 46, No. 5, pp. 294-301, June, 2009.
- [35] Y.-L. Lin, H.-W. Lin, A Study on the Goal Value for Massively Multiplayer Online Role-Playing Games Players, *Computers in Human Behavior*, Vol. 27, No. 6, pp. 2153-2160, November, 2011.
- [36] L. Xiao, Z. Guo, J. D'Ambra, Analyzing Consumer Goal Structure in Online Group Buying: A Means-End Chain Approach, *Information & Management*, Vol. 54, No. 8, pp. 1097-1119, December, 2017.
- [37] Y. Jung, H. Kang, User Goals in Social Virtual Worlds: A Means-End Chain Approach, *Computers in Human Behavior*, Vol. 26, No. 2, pp. 218-225, March, 2010.
- [38] Executive Yuan Republic of China, http://www.ey.gov.tw/ state/news3.aspx?n=283412AE33AC4D71&sms=7CB99E9B EAC3127D
- [39] A. Chen, Y. Lu, S. Gupta, Enhancing the Decision Quality through Learning from the Social Commerce Components, *Journal of Global Information Management*, Vol. 25, No. 1, pp. 66-91, January-March, 2017.
- [40] I. Cho, J. K. Kim, H. Park, S. M. Lee, Motivations of Facebook Places and Store Atmosphere as Moderator, *Industrial Management & Data Systems*, Vol. 114, No. 9, pp. 1360-1377, September, 2014.
- [41] J. Gutman, Means-End Chains as Goal Hierarchies, *Psychology and Marketing*, Vol. 14, No. 6, pp. 545-560, December, 1997.
- [42] R. I. Haley, Benefit Segmentation: A Decision-Oriented Research Tool, *Journal of Marketing*, Vol. 32, No. 3, pp. 30-35, July, 1968.
- [43] B. Leisen, Image Segmentation: The Case of a Tourism Destination, *Journal of Services Marketing*, Vol. 15, No. 1, pp. 49-66, November, 2001.
- [44] J. H. Myers, Benefit Structure Analysis: A New Tool for Product Planning, *Journal of Marketing*, Vol. 40, No.4, pp. 23-32, October, 1976.
- [45] G. Botschen, E. M. Thelen, R. Pieters, Using Means-End Structures for Benefit Segmentation: An Application to Services, *European Journal of Marketing*, Vol. 33, No. 1/2, pp. 38-58, September, 1999.
- [46] M. Rokeach, *The Nature of Human Values*, Free Press, 1973.
- [47] A. Mitchell, *The Nine American Lifestyles: Who We Are and Where We're Going*, Warner, 1983.
- [48] L. R. Kahle, Social Values and Social Change: Adaptation to Life in America, Praeger, 1983.
- [49] J. Bloemer, D. Dekker, Effects of Personal Values on Customer Satisfaction: An Empirical Test of the Value Percept Disparity Model and the Value Disconfirmation Model, *International Journal of Bank Marketing*, Vol. 25, No. 5, pp. 276-291, November, 2007.

- [50] K. A. Keng, K. Jung, T. S. Jiuan, J. Wirtz, The Influence of Materialistic Inclination on Values, Life Satisfaction and Aspirations: An Empirical Analysis, *Social Indicators Research*, Vol. 49, No. 3, pp. 317-333, March, 2000.
- [51] H. S. Kim, Consumer Profiles of Apparel Product Involvement and Values, *Journal of Fashion Marketing and Management: An International Journal*, Vol. 9, No. 2, pp. 207-220, 2005.
- [52] Renren, http://www.page.renren.com.
- [53] T. J. Reynolds, J. Gutman, Laddering Theory, Method, Analysis, and Interpretation, *Journal of Advertising Research*, Vol. 28, No. 1, pp. 11-31, February-March, 1988.
- [54] K. Krippendorff, Content Analysis: An Introduction to its Methodology, Sage, 2012.
- [55] H. H. Kassarjian, Content Analysis in Consumer Research, *Journal of Consumer Research*, Vol. 4, No. 1, pp. 8-18, June, 1977.
- [56] R. D. Wimmer, J. R. Dominick, *Mass Media Research*, Cengage Learning, 2013.
- [57] R. Pieters, H. Baumgartner, D. Allen, A Means-End Chain Approach to Consumer Goal Structures, *International Journal of Research in Marketing*, Vol. 12, No. 3, pp. 227-244, October, 1995.
- [58] M. Santosa, J.-X. Guinard, Means-End Chains Analysis of Extra Virgin Olive Oil Purchase and Consumption Behavior, *Food Quality and Preference*, Vol. 22, No. 3, pp. 304-316, April, 2011.
- [59] W.-I. Lee, C.-Y. Chang, Y.-L. Liu, Exploring Customers' Store Loyalty using the Means-End Chain Approach, *Journal* of *Retailing and Consumer Services*, Vol. 17, No. 5, pp. 395-405, September, 2010.
- [60] T. J. Reynolds, C. Dethloff, S. J. Westberg, Understanding Consumer Decision Making: The Means-End Approach to Marketing and Advertising Strategy, Lawrence Erlbaum Associates, 2001.
- [61] A. I. A. Costa, D. Schoolmeester, M. Dekker, W. M. F. Jongen, To Cook or Not to Cook: A Means-End Study of Motives for Choice of Meal Solutions, *Food Quality and Preference*, Vol. 18, No. 1, pp. 77-88, January, 2007.
- [62] I. Flight, C. G. Russell, I. Blossfeld, D. N. Cox, From Sensory Attributes to Marketing Hooks: Using Laddering to Understand Consumer Perceptions of Red Meat, *Food Australia*, Vol. 55, No. 9, pp. 418-431, September, 2003.
- [63] M. E. P. Seligman, *Flourishing: Positive Psychology and the Life Well-Lived*, American Psychological Association, 2003.
- [64] J. Raacke, J. Bonds-Raacke, MySpace and Facebook: Applying the Uses and Gratifications Theory to Exploring Friend-Networking Sites, *Cyberpsychology & Behavior*, Vol. 11, No. 2, pp. 169-174, April, 2008.
- [65] International Data Corporation, http://www.ithome.com.tw/ itadm/article.php?c=72002.
- [66] K. Dong, T. Guo, Z. Ling, M. Yang, W. Wu, APSON: Anonymous and Private SOcial Network, *Journal of Internet Technology*, Vol. 18, No. 7, pp. 1543-1551, December, 2017.
- [67] J. Legge, *Confucian Analects: The Great Learning, and the Doctrine of the Mean*, Courier Dover Publications, 1893.

Biographies



Yun-Shan Cheng received the master's degree from the Information Management Department of Shih Hsin University in 2011, and Ph.D. degree from the Business Administration department of National Central University in 2018.

Her research interest focuses on human behaviors in social networking sites and has published more than 10 papers.



Yu-Chin Liu got bachelor and master degree from the Institute of Information Management of National Chiao Tung University from 1988 to 1994, and Ph.D. degree from the Business Administration department

of National Central University in 2006. She is an associate professor in the Information Management department of Shih Hsin University.

Appendix 1

ABV table

Attributes		
Newsfeed	Following	Check-in
Comment	Tag	Post
FindFriends	Events	Leave a private message on a friend's wall
Photo/Video	Messages	Music
Like	Birthday	Emoticon
Notes	Q & A	Give presents to friends
Notifications	Post Wall	Poke
Pages	Groups	Games
ShareLinks	Chat	
Benefits		
Make friends feel happy	Obtain new information	Have an optimistic philosophy of life
Understand friend's recent	Provide reminders of to-do items	Attract attention
situations		
Kill time	Record life	Increase the numbers of chat topics
Relieve pressure	Convenience of communication	Keep conversations private
Express feelings	Improve interpersonal relationships with others	Show emotion easily
Save time	Increase (usage) scores	Earn higher privileges
Save money	Ameliorate loneliness	Increase income
Expand circle of friends	Monitor others	Broadcast news easily
Maintain friendships	Avoid missed communications	Improve language skills
Reduce the need to reply quickly		Help me to make decisions
Values		
Sense of belonging	Sense of accomplishment	Self-respect
warm relationships with others	excitement	
being respected	self-fulfillment	
security	fun and enjoyment in life	