

## THE INFLUENCES OF SOCIAL EMBEDDEDNESS AND SWITCHING COSTS ON BLOGGER RETENTION INTENTION

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### ABSTRACT

As growth in the blog market has intensified in recent years, bloggers can easily switch to other blog websites. Blog service providers must adopt viable strategies to keep their customers. However, not many studies investigate the factors that may help blog service providers to retain current bloggers from the perspectives of switching costs and social embeddedness. This study fills this gap and examines the antecedents of customer retention intention on the Wretch, a popular blog website in Taiwan. Three hundred and nine sets of valid data are gathered. Analytical results indicate that switching costs positively affect customer retention intention. Structural embeddedness of blogger-blogger and structural embeddedness of blogger-message positively affect switching costs. Relational embeddedness of blogger-blogger and relational embeddedness of blogger-message negatively affect switching costs. This study demonstrates that switching costs function as an important mediator between embeddedness and customer retention intention. The findings of this study significantly contribute to efforts of practitioners to develop advanced system functions and services on blog websites based on the social embeddedness perspective in order to form an exit barrier, heighten the importance of switching costs, and retain customers.

Keywords: Blog, Social embeddedness, Switching costs, Customer retention intention.

### 1. Introduction

Due to the prevalence of social networking technology, blogs have become one of the most popular online platforms [Nielsen Reports, 2009]. Bloggers can use their blogs to present themselves and interact with others, and to post articles and sharing information. Over 120,000 new blogs emerge every day [Sifry, 2007]. More than 133 million blogs existed worldwide with nearly 1 million blog posts each day [Sifry, 2008]. For example, according to [blogpulse.com](http://blogpulse.com), contents which individual generated were 126,861,574 on May 4, 2010 [O'Leary, 2011].

Blog websites are rapid growth and intensified competition. Users can publish and share their ideas, opinion, and knowledge. Online service switching becomes a key challenge for blog service providers (BSP) [Zhang et al. 2012]. Switching behavior has led to loss of customers (bloggers) for BSP, which can have detrimental impact on BSP's market share and profit. Despite these negative effects, few studies have sought to investigate bloggers switching behavior or intention more thoroughly. The BSP are realizing the need to understand how to attract and switch competitors' existing bloggers, and retain current bloggers while offering free, diverse, and innovative services. The competing BSP may look for the same way and thus the way of retaining existing bloggers is also needed. The issues of "bloggers retention" are, therefore, of major concern in BSP. The topic of bloggers' switching behavior and switching intention is also gaining the attention of researchers [Zhang et al., 2009; Hsieh et al., 2012].

Switching costs function as an exit barrier in the collaboration between buyers and sellers [Weiss and Anderson, 1992]. When selecting a supplier, customers evaluate switching costs from all available plans [Jackson, 1985]. Shen and Chiou [2009] indicate since, with respect to the switching costs in specific asset investments, bloggers are assumed to exhibit a higher loyal intention towards the blogging community. Restated, bloggers wanting to switch to a new blog website must evaluate the switching costs before making a decision.

Bloggers can easily post comments, build social relationships and share files on blogs via comments, links, or tracebacks. These relationships between bloggers and bloggers or these relationships between bloggers and artifacts (such as articles, files or comments etc.) form social embeddedness of bloggers. Granovetter [1985] has pioneered the concept of social embeddedness, in which a large portion of economic activities are passively embedded by social relationships. With simple functions of links and comments, blogs strengthen the interaction and connection between each individual and society, subsequently forming a new social embeddedness. Restated, when bloggers

build relationships on blogs, he or she forms social embeddedness. Thus, when bloggers with high social embeddedness want to switching BSP, switching costs such as loss of a social relationship should be considered.

The research question of this study is to understand the antecedents of customer retention intention. In this study, customer retention intention refers to bloggers' intention to continue using the current blog website. Based on the interactive relationships and characteristics of a blog environment, this study combines literature of switching costs and social embeddedness to explore the factors influencing customer retention intention and to empirically test the research model with existing bloggers.

The remainder of this study is organized as follows. The next section sheds some light on blog, social network, social embeddedness, switching costs and customer retention, followed by the literature review. Then the research method and results are presented. Finally, the discussions, and implication and conclusions are suggested.

## 2. Literature

### 2.1. Blog

Originating from personal web pages, blogs are constantly modified web pages that contain brief daily records [Morris, 2001]. Du and Wanger [2005] contend that in addition to personalization, blogs are a web-based and completely automatic platform with the intention of community service. Aimeur and Brassard [2005] described blogs as a free and open-to-public personal editing space, where hyperlinks are allowed, contents are frequently updated, and files are shared. Todoroki et al. [2006] viewed blogs as a multimedia platform, in which contents are presented following temporal organization and links to pictures. Also, updating blogs does not require professional knowledge of software. Moreover, in addition to posting time stamped information on blogs, visitors can type key words to locate contents. Chen [2012] described that blogging is a way to express one's own voice. Women with a strong need to self-disclose information are like to express their voices on blogs. Dearstyne [2005] indicated that blog is relatively cheap and easy to use software, making it simple to maintain and organize contents. Furthermore, most blog contents are not edited or filtered. Because people can easily to posts on blogs, the blog distillation problem, that is, given a user query find the blogs that are most related to the query topic is addressed [Keikha and Crestani, 2012].

Besides, blogs have been discussed widely from a social network perspective [Furukawa et al. 2007; Marlow, 2004; Ali-Hasan and Adamic, 2007]. Furukawa et al. [2007] discussed the interactive relationships among blogs from the perspective of a community and the social network structure of blogs is formed by blogroll, permalink, and traceback. Based on social network analysis, Marlow [2004] evaluated the popularity of blogs by using blogroll and permalink from a social network perspective. Marlow revealed that, among various interacting functions of blogs, comment is generally viewed as the easiest and the most effective mean for blog authors and readers to interact with each other. Ali-Hasan and Adamic [2007] noted that through links, tracebacks, and comments, bloggers establish their own social relationship network; in addition, comment function is the most influential mean of building relationships between bloggers.

### 2.2. Social network

A social network comprises social entities and ties, which exist among entities [Wasserman and Faust, 1994]. Social entities refer to actors, including individuals, groups, or companies. Actors can link to other ones through social ties, which connect two actors. Capable of delineating the network of communication between entities, a social network displays the position and communicative route of relevant individuals [Freeman, 1979].

A social network contains the ego network and the whole network [Wasserman and Faust, 1994]. Research on these two network types demonstrates many differences in research object and theoretical methodology [Wasserman and Faust, 1994]. The ego network focuses on an ego-centric one-node, in which only a single actor and the actor's relationship with other actors need to be analyzed. The ego-centric network only considers the ties of a focus actor: a specific actor is at the center, and the actor's social network with other actors is analyzed. The whole network focuses on analyzing complete network. It explores relationships among all actors in a specific network.

Wasserman and Faust [1994] presented a classification mode for a network, based on features of actors and property of the linkages among actors. Restated, a network is classified by the network mode. The network mode refers to the number of entities. The network mode includes one-mode network and two-mode network, and an even higher mode network [Wasserman and Faust, 1994]. One-mode network describes a single group of actors, and a two-mode network contains two groups of actors or a group of actors and a group of events. Additionally, a two-mode network made up of a group of actors and a group of events is also referred to as an affiliation network.

The concept of tie, as defined in social network theory, is the connection between two actors, who can either be individuals or companies [Wasserman and Faust, 1994]. Ties can be divided into direct and indirect ties [Wasserman & Faust, 1994]. Direct ties refer to two actors directly connect each other, while indirect ties refer to two actors link each other via a third actor [Burt, 1992, 1997].

As for ties-strength, ties can be divided into strong and weak ones [Granovetter, 1973; Levin and Cross, 2004]. Levin and Cross [2004] evaluate the strength of ties based on the degree of intimacy, number of communication, and degree of reciprocity. Granovetter [1973] defined ties-strength as the number of interactions, degree of reciprocity, and emotional strength.

When an attempt is made to understand the ties among actors in the network, the network position of each actor can be calculated by estimating the actor's centrality in a network. Degree centrality is defined by the number of ties in which an actor directly connects to other actors [Burt, 1982], i.e. the number of direct ties that an actor develops in a network. An actor with more direct ties implies a higher degree centrality.

### 2.3. Social embeddedness

Human activities are always affected by the surrounding complex and various environments. While introducing this concept of embeddedness, Polanyi [1944] noted that individual economic motivation is embedded in social relationships, explaining why economic activities belong to social ones.

Burt [1983] asserted that in the developing process of economic activities, a social market structure is formed. Members develop relationships within this structure by exchanging and sharing information with other individuals. Therefore, in terms of economic activities, more than transaction and commodity exchange must be considered; environmental elements also play a role. Granovetter [1985] proposed the notion of social embeddedness, in which social relationships restrict economic activities. Clegg and Wall [1990] further extended the embeddedness concept to represent a relational framework. Within this framework, a part of individual behavior is independent, while the other part is affected by external relationships. Within this relational framework, an individual must consider cultures, rules, ethics, and other interactive modes in a social environment. Granovetter [1992] argued that corporate activities are not determined by financial estimates. Such activities are established based on the social network status. In addition to influencing corporate activities and objectives, this network status determines the most appropriate strategic behavior. The relationship and structure based on the mutual trust of actors can affect the economic behavior of an organization. Organizational sociologists also contended that organizational routine, procedure, and structure are embedded in social contexts [Zukin and DiMaggio, 1990].

Granovetter [1992] divided social embeddedness into relational embeddedness and structural embeddedness. While referring to the quality of a dyadic exchange, relational embeddedness focuses on the mutual trust of all transaction participants. Structural embeddedness refers to the network structure, under which, transaction participants can exchange information efficiently, ultimately shedding light on how group relationship and mechanism affect transaction behavior.

### 2.4. Switching costs

Switching costs refer to the cost that customers perceive when changing suppliers. Related costs include time, money and psychological elements [Dick and Basu, 1994], including financial loss, loss of a social relationship, and loss felt at psychological level [Murray, 1991]. Kim et al. [2004] described switching costs as consisting of lost, adaptation, and move-in costs. Lost costs are incurred when individuals contemplate whether their social status is lost when switching service providers. Adaptation costs are cognitive costs happening to adaptation, such as search and learning costs. Move-in costs refer to economic costs when individuals switch to a new supplier, such as when purchasing new equipment. Ping [1993] indicates that customers aware of expensive switching costs incurred when switching to another supplier are likely to remaining loyal to the old one.

Klemperer [1987] asserted that switching costs include learning costs, transaction costs and artificial switching costs. Learning costs mean approaching a new brand required time and capital. For instance, switching from a Microsoft operating system to a Macintosh system requires a considerable investment in time and effort. Although the two products resemble each other in many of their functions, learning costs remain high. Transaction costs are inevitable in the switching process, such as the cost required for terminating a bank account and opening a new one in another bank. Artificial switching costs mean the accumulated bonus that the previous company provides is no longer valid. For instance, although many airline companies offer mileage bonus points to their customers, those points are no longer valid when customers switch to other companies. Table 1 is shown the summary of switching costs.

Table 1. The Summary of Switching Costs

Literature	Switching costs
Klemperer [1987]	Learning, transaction, and artificial switching costs
Dick and Basu [1994]	Time, money, and psychological costs
Kim et al. [2004]	Lost, adaptation, and move-in costs

Recently, several studies indicated costs is a key antecedent of blogger's switching behavior or switching intention (e.g. Hsieh et al., 2012). Hsieh et al. [2012] investigated which factors influence bloggers switching social

network site. They indicated switching cost negatively influence switching intention and switching behavior. They expressed bloggers might lose their link to people with whom they have been communicating through blogs; they also have to inform others of their switching decisions, and then expend additional time and effort to build their social network sites profiles before switching.

### 2.5. Customer retention

Gerpott et al. [2001] defined customer retention as a business relationship between customers and suppliers. The relationship can be evaluated by a) either successive purchase behavior or continuance of a contractual relationship with suppliers or b) customers' intention to purchase products from a company in the future or customers' intention to continue the contractual relationship. The definition includes the concepts of behavior and intention. Namely, customer retention includes the actual behavior of purchasing again and the current intention to purchase again. From this aspect, customers' intention to purchase again is easier to evaluate than customers' actual behavior of purchasing again. Therefore, many scholars studied customer retention by using purchase intention [Bolton et al., 2000; Jones et al., 2000]. Jones et al. [2000] defined customer retention as the intention to repurchase. Bolton et al. [2000] adopt the perspective of repeated purchase intention to define customer retention as customers' intention to repeat a purchase with the same service providers, which is called, in short, customer retention intention.

Reichheld and Sasser [1990] identified the benefits of customer retention to an organization. First, customers generate increasingly more profits each year they stay with a company. Second, when a company keeps a customer, purchases rise and operating costs decline. Third, a company with long-time customers can often charge more for their products and services. Finally, long-time customers provide the free advertising. Zeithaml et al. [1996] also shown customer defection and retention are key issues for firms. Zeithaml et al. discussed the relationship between perceived service quality, and favorable and unfavorable behavioral intention. They indicated positive perceptions of service quality determine positive behavioral intentions, which lead to customers deciding to remain within a firm. A firm with these remaining customers can obtain positive consequences. For example, these customers would increase spending and refer other customers to the firm. However, negative perceptions of service quality lead to negative behavioral intentions, and finally, customers defect the firm. Thus, the firm lost customers and increased additional spending to attract replacement customers. Zeithaml et al. indicated perception of quality is a key antecedent of customer behavior such as customer defection and retention.

## 3. Method

### 3.1. Model

Although there are several studies discussed the issues related to bloggers' retention intention, the perspective of interactive relationships of bloggers is less addressed. Thus, based on social network and embeddedness theory, this study investigates the influences of embeddedness on bloggers' switching costs and retention intention.

Granovetter [1985] proposed the social embeddedness concept, indicating that a large portion of economic activities are restricted by embeddedness, which is formed by social relationships. Bloggers switching to a new blog website can be viewed as an economic activity. When considering whether to continue using current blogs, bloggers are restricted by network embeddedness status. Therefore, based on the perspective of social embeddedness, this study examines the influences of switching costs and the relationship between switching costs and customer retention intention. Figure 1 illustrates the research model of this study. Independent variables represent the embeddedness of blogger-blogger, embeddedness of blogger-follower, and embeddedness of blogger-message. Mediator refers to switching costs, while dependent variable represents customer retention intention.

#### 3.1.1. The definition of embeddedness on blogs

Interactions in a hypermedia environment include human-human interaction and human-message interaction [Ko et al., 2005]. Human-human interaction simulates realistic communication, in which both the message sender and receiver can exchange opinions. In human-message interaction, users in an interactive media can control, search, and edit message content, as well as generate interactions with messages [Ariely, 1998]. Suntornpithug and Khamalah [2010] indicated machine and person interactivity (human-message interaction) can predict consumers' intentions to purchase. Besides, Subramony [2002] introduced a means-end approach to human-computer interaction (human-message interaction) and explained why users choose particular websites. Massey and Levy [1999] suggested that human-human interaction allows for users to use a website as a mediator to communicate with other users. For instance, in a chat room, board, or discussion forum, users can exchange opinions with other users.

Blog environment also includes human-human interaction and human-message interaction. Users can establish interactive relationships by forming online friendships, leaving comments, or tracing posts on blogs. Therefore, this study proposes three interaction modes on blogs: blogger-blogger, blogger-follower, and blogger-message. These interactions form interactive relationships on blogs. Blogger-blogger and blogger-follower modes are human-human interaction; blogger-message is human-message interaction.

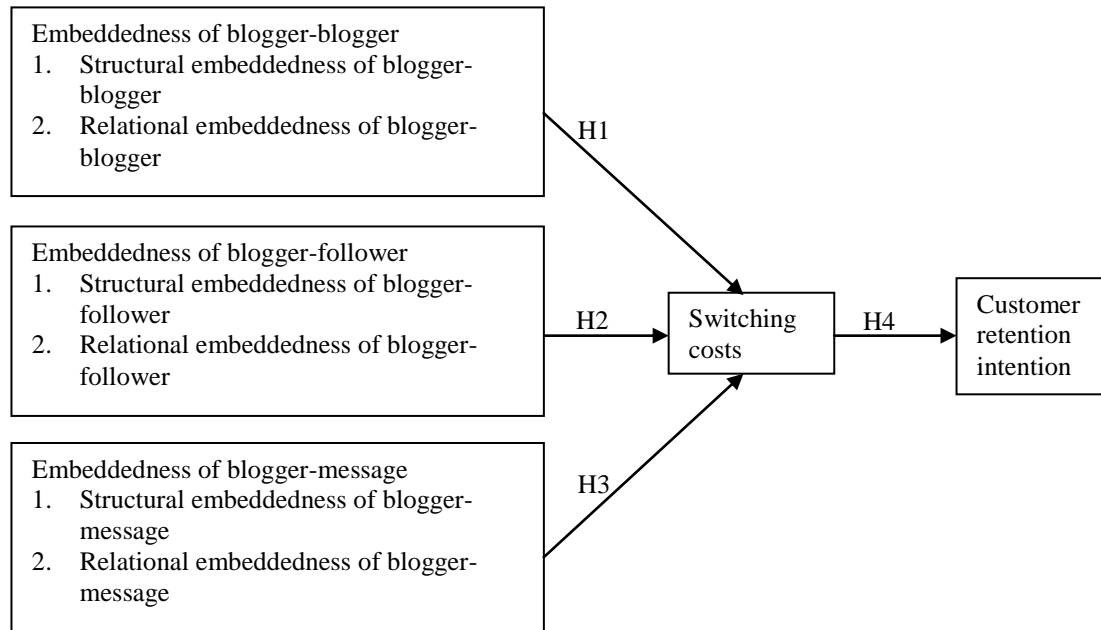


Figure 1. Research Model

This study illustrates the forms of social embeddedness that blogs represent by blogger-blogger, blogger-follower, and blogger-message modes in a blog environment and then identifying each form of social embeddedness that bloggers may encounter. Clegg and Wall [1990] indicated that embeddedness represents a relational framework. On blogs, relationships may originate from functions like forming online friendships [Furukawa et al., 2007], tracing others' posts [Ali-Hasan and Adamic, 2007], or commenting on others' posts [Todoroki et al., 2006]. Different relationships result in different forms of embeddedness. The concept of embeddedness proposed in this study refers to the interactive relationships of a focus blogger. In this study, a focus blogger refers to a specific blogger is at the center, and the blogger's social network with other bloggers, blogger's social network with other followers or blogger's social network with blog's functions is analyzed.

Many forms of embeddedness can be found in the literature [Granovetter, 1992; Gulati, 1998; Rowley et al., 2000; Anderson et al., 2001]. This study adopts structural embeddedness and relational embeddedness [Granovetter, 1992] to investigate the influence of switching costs on retention intention. Granovetter [1992] explained that relational embeddedness focuses on the interaction between individual parties and directly affects economic behavior and decisions. If strong ties exist among actors, those actors become more likely to make discussions, share opinions, and reach a common understanding regarding a behavior [Gulati, 1998]. In conclusion, relational embeddedness stresses the strong ties among actors that help strengthen cooperation [Gulati, 1999]. Rowley et al. [2000] indicated the number of ties used to assess the structural embeddedness, and strength of ties used to assess relational embeddedness. Thus, this study evaluates the degree of structural embeddedness of a blogger, by using the number of ties that a focus blogger has from social network analysis. For example, high structural embeddedness refers to a focus blogger has many direct ties with other bloggers. With respect to relational embeddedness, this study evaluates the degree of relational embeddedness of a blogger, based on tie-strength from social network analysis. For instance, high relational embeddedness refers to a focus blogger has strong ties with other bloggers.

By following the classification of interaction modes and embeddedness, this study proposes six forms of embeddedness on blogs: structural embeddedness of blogger-blogger, relational embeddedness of blogger-blogger, structural embeddedness of blogger-follower, relational embeddedness of blogger-follower, structural embeddedness of blogger-message, and relational embeddedness of blogger-message.

With respect to blog embeddedness, this study explores a focus blogger and other bloggers' network statuses by using a one-mode network [Wasserman and Faust, 1994]. In this network, nodes refer to bloggers and ties represent the relationships with online friends.

1. Structural embeddedness of blogger-blogger refers to the number of bloggers who add the focus blogger as a friend. So the focus blogger is on the friend list of other bloggers. These bloggers can connect to the focus blogger via hyperlinks.

2. Relational embeddedness of blogger-blogger refers to how frequently other bloggers who add the focus blogger as a friend leave comments on the focus blog.

As for embeddedness of blogger-follower, this study examines the network status by using a one-mode network [Wasserman and Faust, 1994]. In this network, nodes refer to bloggers, and ties represent the connections with online followers. Followers are bloggers posting comments to a focus blog. However, followers are not on the friend lists of a focus blogger. In other words, followers are fans of the focus blogger.

1. Structural embeddedness of blogger-follower refers to the number of online followers that the focus blogger has.
2. Relational embeddedness of blogger-follower refers to how often online followers post comments on the focus blog. A higher frequency implies a closer blogger-follower relationship between online followers and the focus blog.

As for embeddedness of blogger-message, this study examines the network status of the focus blogger and blog functions by using a two-mode network [Wasserman and Faust, 1994]. In this network, nodes refer to bloggers and blog functions. Ties refer to the using relationships (i.e. relationships in which a blogger uses blog functions).

1. Structural embeddedness of blogger-message implies the number of the focus blogger using services/functions provided by the blog website.
2. Relational embeddedness of blogger-message refers to the frequency of the focus blogger using services/functions provided by the blog website.

### 3.1.2. The definition of switching costs on blogs

By using the classification of Klemperer [1987], this study develops the concept of switching costs. In this study, switching costs are defined as a situation in which the perceived costs bloggers must spend when switching to a new blog website. Klemperer classified switching costs into learning, transaction, and artificial switching costs. In this study, learning costs refer to the time and effort bloggers must exert when learning to use the functions and layout of the new blog website. Transaction costs are financial losses incurred by switching to a new blog website. Most blog websites in Taiwan are free of charge to users, explaining why this study does not consider transaction costs. The relational costs discussed in this study are revised from artificial switching costs proposed by Klemperer. Many studies indicated loss of a social relationship is key switching costs [Dick and Basu, 1994; Murrar, 1991; Kim et al., 2004; Hsieh et al., 2012]. This study discusses the relationships among bloggers, online friends and online followers. When bloggers switch to a new blog website, these human relationships might be interrupted, causing a perceived loss of a human relationship among bloggers. Thus, the switching costs of this study include learning and relational ones.

### 3.1.3. The definition of customer retention intention on blogs

Customer retention intention refers to the willingness of customers to re-purchase products from the same providers [Bolton et al., 2000]. Based on Bolton et al. [2000], this study defines customer retention intention as bloggers' intention to continue using the current blog website.

### 3.2. Hypotheses

A higher degree of structural embeddedness of blogger-blogger implies more bloggers adding the focus blogger as a friend. This relationship is passively constructed. Therefore, when deciding to switch to a new blog website, a focus blogger has greater difficulty in re-constructing these relationships, i.e. greater difficult in modifying the links on friends' blogs.

Relational embeddedness of blogger-blogger refers to the frequency of other bloggers who add the focus blogger as a friend post comments on the focus blog. A higher degree of relational embeddedness implies strong ties that the focus blogger has. However, a focus blogger wanting to switch to a new blog website may ultimately curtail these human relationships; some intimate human relationships might cease. Consequently, the focus blogger must face potential losses in human relationships.

A higher degree of embeddedness of blogger-blogger implies a greater exit barrier to the focus blogger when switching to a new blog website. Switching costs function as an exit barrier in the collaboration between both sides in transaction [Weiss and Anderson, 1992]. An exit barrier may increase difficulties for customers and obstruct them from switching behavior [Jones et al., 2000]. Customers must evaluate possible switching costs when considering whether to switch to new suppliers [Jackson, 1985]. In sum, a higher degree of embeddedness of blogger-blogger implies a greater exit barrier for the focus blogger, who is likely to spend more switching costs when switching to a new supplier. This study thus hypothesizes the following:

H1a. Structural embeddedness of blogger-blogger positively affects switching costs.

H1b. Relational embeddedness of blogger-blogger positively affects switching costs.

A higher degree of structural embeddedness of blogger-follower refers to a situation in which many online followers generate interactive relationships with the focus blogger by posting comments on the focus blog. As they

visit the focus blog, online followers have opportunities become acquainted with others with similar interests. A focus blogger deciding to move to a new blog website finds it extremely difficult to bring so many online followers to the new blog website. This difficulty is attributed to relationship costs.

A higher degree of relational embeddedness of blogger-follower implies that the focus blogger has strong ties with online followers. These online followers are loyal readers who like articles posted by the focus blogger and re-visit the focus blog. These online followers share opinions and interact with the focus blogger on the focus blog. When wanting to switch to a new blog website, a focus blogger risks losing the relationships with online followers. This risk is attributed to a loss of mental and emotional costs [Burnham et al., 2003]. This study thus hypothesizes the following:

H2a. Structural embeddedness of blogger-follower positively affects switching costs.

H2b. Relational embeddedness of blogger-follower positively affects switching costs.

Structural embeddedness of blogger-message refers to the focus blogger use multiple functions on the blog website. Relational embeddedness of blogger-message refers to a situation in which the focus blogger frequently operates these functions and services on the blog website. As for long-term use, bloggers become accustomed to current the blog website, its functions and services. Restated, bloggers have inertia towards the website. Therefore, when encountering a new blog website offering better conditions, the bloggers tend to be unmoved. Changing this inertia requires higher costs. In sum, switching costs and inertia have a coexistent relationship [Heide and John, 1988]. A higher degree of embeddedness of blogger-message implies a greater inertia of bloggers are more inert on the blog website, explaining why they perceive switching to another blog website as producing higher switching costs. Therefore, this study hypothesizes the following:

H3a. Structural embeddedness of blogger-message positively affects switching costs.

H3b. Relational embeddedness of blogger-message positively affects switching costs.

Previous studies indicated that perceived switching costs have a relationship with customer loyalty [Wang et al. 2011], and repurchase intention [Lee et al., 2011]. Ping [1993] described a situation in which customers feel that they must incur expensive switching costs in order to turn to new companies. Under this circumstance, they tend to remain loyal and continue using services provided by the original companies [Huang and Hsieh, 2012]. In this manner, switching costs force users to remain loyal and reduce the likelihood of switching to other companies. Cross [1999] stated that with high switching costs, many customers continue transacting with original service providers, despite dissatisfaction with their services. In sum, switching costs influence customer retention intention. Bloggers wanting to switch to another blog website encounter various switching costs, including learning and relationship costs. Those bloggers must spend additional time in learning how to use the new website; they also risk losing human relationships established through the old website. To avoid such a loss, bloggers might not want to switch to another blog website. Switching costs refer to what the users must pay in terms of expenditure with shifting to other websites, such as learning to operate the new system or missing human relationships. These costs result in customers locked into the original website [Valletti, 2000]. Restated, customers whom perceive switching costs as expensive may become locked in by current service providers, thus generating a higher intention for retention. Thus study thus hypothesizes the following:

H4. Switching costs positively affect customer retention intention.

### 3.3. Measure

In terms of evaluating switching costs and customer retention intention, this study develops items based on the studies of Burnham et al. [2003] and Bolton et al. [2000]. This study evaluates the structural embeddedness, based on the degree centrality from social network theory [Burt, 1982] to compute the number of ties [Rowley et al., 2000]. This study evaluates the relational embeddedness, based on the tie strength from social network theory [Rowley et al., 2000]. Structural embeddedness of blogger-blogger is evaluated by the number of bloggers that befriend the focus blogger. Relational embeddedness of blogger-blogger is evaluated by how frequently other bloggers who add the focus blogger as a friend post comments on the focus blog.

This study also evaluates the structural embeddedness of blogger-follower, based on the number of online followers that the focus blogger has via the focus blog. Relational embeddedness of blogger-follower is evaluated by how often the online followers post comments on the focus blog. As for structural embeddedness of blogger-message, this study develops corresponding evaluative items by focusing mainly on the functions and services provided by the Wretch website. Structural embeddedness of blogger-message focuses on how extensive bloggers use the services and functions available on the Wretch website. For instance, the blogger replies, "I have updated album" or "I have revised the blog layout." Relational embeddedness of blogger-message refers to how often bloggers use the functions and services provided by the Wretch website. This study designs the survey questionnaire with the Likert 5 scale method. Table 2 lists the items.

Table 2. The Questionnaire Items

Construct	Items
Structural embeddedness of blogger-message	<ol style="list-style-type: none"> <li>1. update album</li> <li>2. post articles on blog website</li> <li>3. recommend articles on blog website</li> <li>4. traceback articles on blog website</li> <li>5. revise the layout on blog website</li> <li>6. update multi-media (such as music or film) on blog website</li> <li>7. search other bloggers on blog website</li> </ol>
Structural embeddedness of blogger-message: The <u>number</u> of bloggers using services/functions which are provided by the blog website. (1: very disagree; 5: very agree)	
Relational embeddedness of blogger-message	<ol style="list-style-type: none"> <li>1. update album</li> <li>2. post articles on blog website</li> <li>3. recommend articles on blog website</li> <li>4. traceback articles on blog website</li> <li>5. revise the layout on blog website</li> <li>6. update multi-media (such as music or film) on blog website</li> <li>7. search other bloggers on blog website</li> </ol>
Relational embeddedness of blogger-message: The <u>frequency</u> of bloggers using services/functions which are provided by the blog website. (1: never; 5: very often)	
Switching costs	<ol style="list-style-type: none"> <li>1. Learning to use the functions and services offered by a new blog website would take time</li> <li>2. There is not much involved in understanding a new blog website (r)</li> <li>3. Even after switching, it would take effort to “get up to speed” with a new blog website</li> <li>4. Getting used to how a new blog website would be easy (r)</li> <li>5. It takes time to create a account on a new blog website</li> <li>6. It takes time to input personal data on a new blog website</li> <li>7. It takes time to design my personal layout on a new blog website</li> <li>8. Even after switching, I would lose friends who are on the friend list on Wretch website</li> <li>9. Even after switching, I would lose followers who are not on the friend list on Wretch website</li> <li>10. Even after switching, I would reduce online interactions with friends</li> </ol>
Switching costs: The perceived learning and relational costs bloggers have to spend when they switch to a new blog website. (1: very disagree; 5: very agree)	
Customer retention intention	<ol style="list-style-type: none"> <li>1. I intend to switch to other blog websites (r)</li> <li>2. I intend to continuously use Wretch website</li> <li>3. If other blog websites offer better service or functions than Wretch website, I will switch to other blog websites (r)</li> <li>4. I would like to recommend Wretch website to other users</li> <li>5. I want to adopt paid services/functions offered by Wretch website</li> </ol>
Customer retention intention: Bloggers’ intention to continue using the current blog website (1: very disagree; 5: very agree)	

Following a questionnaire draft including blogger-message embeddedness, switching costs, and customer retention intention, this study consults with two scholars and experts to ensure the questionnaire’s content validity and reliability. Hard copies of the questionnaire are then distributed to 5 non-Wretch bloggers, who fill out the questionnaire in order to understand the face validity of the questionnaire draft. The questions are subsequently revised.



### 3.4. Data collection

The research participants of this study are bloggers who post contents, blog daily, share their thoughts and exchange information on blogs. To investigate the embeddedness of blogs, this study focuses on Wretch (<http://www.wretch.cc/>), a Taiwanese website offering personal blog services.

An online questionnaire system and a blog social network system were employed for data collection. Trammell and Keshelashvili [2005] indicated “a complete directory of blogs does not exist, and it is impossible to select a random sample.” Thus, many blog studies conducted surveys through convenient samples and usually adopted snowball-sampling techniques [Johnson et al., 2007; Qian and Scott, 2007]. Similar techniques were adopted in this study.

Data gathered in this study contains subjective data and objective data. Questions on blogger-message embeddedness, switching costs, and customer retention intention are answered subjectively. This study accumulates subjective data via an online questionnaire system. This study distributed the invitation messages, which contained the URL of online questionnaire, to popular online forums and blogs on Wretch to encourage bloggers to fill out the questionnaires; bloggers who did so are rewarded with gifts. In this manner, this study gathers data on blogger-message embeddedness, switching costs, and customer retention intention. Following 45 days of continuous operation, 882 answered questionnaires are returned. After the invalid ones are discarded, 641 questionnaires are effective. Restated, 641 bloggers on the Wretch website answer the questionnaires completely.

Subsequently, this study collects objective data, including blogger-blogger embeddedness and blogger-follower embeddedness. This study develops an information system (blog social network system) to automatically gather objective data of the 641 bloggers over the past six months. After the objective data is gathered, two experts view objective information and exclude meaningless comments to derive the values of structural embeddedness of blogger-blogger, relational embeddedness of blogger-blogger, structural embeddedness of blogger-follower, and relational embeddedness of blogger-follower. Some bloggers only allow other bloggers who are on the friend list view their blogs and some bloggers do not continue to update blog over the past six months, explaining why this study excludes 322 sets of embeddedness data. After some bloggers without objective data are deleted, the valid sets of data total 319.

Once sorted out completed, both the subjective data and objective data of 319 bloggers are integrated. Additionally, the subjective and objective data of a blogger is sorted out and integrated into a single set of analytical data. Of the 319 bloggers, 212 are female and 107 are male. As for educational background, more than 85% have a bachelor's degree or higher. As for vocations, 51% are students, and 50% of the bloggers have been using blogs for more than 4 years. Only 12 % use blogs for 1 year. 64% use blogs on an average of less than 6 hours weekly. 51% post less than one blog article weekly. 38% post 1-3 blog articles weekly.

## 4. Results

This study adopts Partial Least Squares (PLS) to analyze the research model. PLS is a component-based structural equation modeling approach, which requires a relatively small sample size, and has no restriction on normal distribution [Chin et al., 2003]. A rule of thumb for robust PLS path modeling estimations suggests that the sample size be equal to the larger of the following [Barclay et al., 1995]: (1) ten times the number of indicators of the scale with the largest number of formative indicators, or (2) ten times the largest number of structural paths directed at a particular construct in the inner path model. This study follows a simple rule of thumb. Thus, the sample size of this study is big enough. The results of PLS are described as follows. The measurement model was first examined and then the structural model was assessed.

### 4.1. Measurement model

Before validating the measurement, each construct must be judged to determine whether it belongs to the formative scale of reflective scale. Jarvis et al. [2003] indicated that the scale judgment of constructs can be based on four principles: (1) the cause-effect among constructs and indicators, (2) the exchange among indicators, (3) covariance among indicators, and (4) the theories of constructs. According to principles, customer retention intention is reflective scale; other constructs are formative scale. To check the validity of the formative constructs, item weights which could be interpreted as beta coefficients in a standard regression were examined [Chwelos and Benbasat, 2001; Kuan and Bock, 2007; Lee et al., 2011]. Thus, this study interpreted the validity and composite reliability of formative constructs.

In this study, Cronbach's alpha of structural embeddedness of blogger-message, relational embeddedness of blogger-message, switching costs and customer retention intention all exceed 0.7, and their composite reliability exceeds 0.7. Additionally, the threshold value indicates a good reliability [Fornell, 1992], as shown in Table 3. Moreover, analytical results demonstrate that the item loading value of customer retention intention all exceed 0.7 ( $p < 0.05$ ). The average variance extracted (AVE) of structural embeddedness of blogger-message, relational

embeddedness of blogger-message, switching costs, and customer retention intention are all higher than 0.5, which indicates good convergence validity [Fornell and Larcker, 1981], as Table 3 illustrates. Root square value of AVE is higher than the construct correlations, indicating an acceptable discriminate validity [Chin, 1998]. Table 4 shows the AVE root square value and the construct correlations, in which the root square value of AVE is higher than the construct correlations. In sum, this questionnaire has an acceptable discriminating validity.

Table 3. Cronbach's Alpha, Composite Reliability and AVE

Construct	Cronbach's alpha	Composite reliability	AVE
Structural embeddedness of blogger-message	0.74	0.81	0.55
Relational embeddedness of blogger-message	0.75	0.83	0.53
Switching costs	0.84	0.88	0.52
Customer retention intention	0.74	0.85	0.65

Table 4. The Square Root of the AVE and Construct Correlations

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Structural embeddedness of blogger-blogger (1)	-							
Relational embeddedness of blogger-blogger (2)	0.62	-						
Structural embeddedness of blogger-follower (3)	0.20	0.25	-					
Relational embeddedness of blogger-follower (4)	0.40	0.46	0.15	-				
Structural embeddedness of blogger-message (5)	0.25	0.19	0.07	0.19	-			
Relational embeddedness of blogger-message (6)	0.15	0.17	0.05	0.12	0.54	-		
Switching costs (7)	0.05	-0.12	-0.02	0.01	0.12	-0.09	-	
Customer retention intention (8)	0.22	0.19	0.12	0.10	0.38	0.16	0.27	-

Note: Diagonal elements show the square root of the AVE

#### 4.2. Structural model

This study analyzes structural model by using PLS. Analytical results indicate that structural embeddedness of blogger-blogger positively influences switching costs ( $\beta = 0.15$ ,  $p < 0.05$ ). H1a is thus validated. Relational embeddedness of blogger-blogger negatively affects switching costs ( $\beta = -0.25$ ,  $p < 0.05$ ). H1b is thus not supported. Structural embeddedness of blogger-follower and relational embeddedness of blogger-follower do not affect switching costs. H2a and H2b are thus not supported. Structural embeddedness of blogger-message positively influences switching costs ( $\beta = 0.26$ ,  $p < 0.05$ ). H3a is thus supported. Relational embeddedness of blogger-message negatively affects switching costs ( $\beta = -0.21$ ,  $p < 0.05$ ). H3b is thus not supported. The explanation of the variance ( $R^2$ ) value of embeddedness to switching costs is 11%. Switching costs positively influences customer retention intention ( $\beta = 0.30$ ,  $p < 0.05$ ). H4 is thus supported.  $R^2$  value of switching costs to customer retention intention is 9%.

PLS analytical results indicate that switching costs are a crucial mediator between embeddedness and intention. Via switching costs, structural embeddedness of blogger-blogger affects customer retention intention indirectly, and its indirect effect is 0.045. Via switching costs, relational embeddedness of blogger-blogger affects customer retention intention indirectly, in which its indirect effect is -0.075. Via switching costs, structural embeddedness of blogger-message affects customer retention intention indirectly, with an indirect effect of 0.078. Via switching costs, relational embeddedness of blogger-message affects customer retention intention indirectly, with an indirect effect of -0.063. Table 5 summarizes the PLS analytical results.

## 5. Discussion

Analytical results indicate that structural embeddedness of blogger-blogger positively affects switching costs. The structural embeddedness of blogger-blogger refers to the number of bloggers adding the focus blogger as a friend. These relationships are passively constructed. Therefore, for the focus blogger, re-constructing the

relationships after switching to a new blog website is extremely difficult. A less likely scenario is to ask other bloggers on the friend list to revise their links to the focus blogs, resulting in higher switching costs. H1a is thus supported.

Table 5. The Results of PLS

Hypothesis	Coefficient	t-value	R square
Structural embeddedness of blogger-blogger -> Switching costs	0.15*	2.64	0.11
Relational embeddedness of blogger-blogger -> Switching costs	-0.25*	3.60	
Structural embeddedness of blogger-follower -> Switching costs	-0.01	0.07	
Relational embeddedness of blogger-follower -> Switching costs	0.02	0.33	
Structural embeddedness of blogger-message -> Switching costs	0.26*	2.44	0.09
Relational embeddedness of blogger-message -> Switching costs	-0.21*	2.24	
Switching costs -> Customer retention intention	0.30*	5.25	

\* Significant at 0.05.

Analytical results further indicate that relational embeddedness of blogger-blogger negatively influences switching costs, a finding which is inconsistent with H1b. Relational embeddedness of blogger-blogger implies that other bloggers who add the focus blogger as a friend frequently post comments on the focus blogger. These frequent interactions imply that the focus blogger has strong ties. Strong ties indicate that the focus blogger has a close link and frequently interactive relationships with other bloggers. Consequently, when the focus blogger wants to move to a new blog website, the other bloggers who add the focus blogger as a friend can be easily informed and these human relationships can be transferred to the new blog website.

Analytical results demonstrate that structural embeddedness of blogger-follower and relational embeddedness of blogger-follower do not significantly affect switching costs. According to the returned questionnaires, every blogger has an average of 7 online followers. Two hundred and sixty five bloggers have 0-7 online followers. Restated, more than 80% have 7 online followers or fewer. Therefore, for general bloggers, switching to a new blog website does not incur too many relationship costs.

In this study, only 8 bloggers have more than 50 online followers. Only renowned bloggers can attract a large number of online followers to post messages. For renowned bloggers, even when they switch to a new blog website, their fans/followers can quickly discern the changes and locate the new blog. Additionally, regardless of whether famous bloggers have strong ties with online followers (high relational embeddedness of blogger-follower), their online followers can follow the famous bloggers to the new blog website. For famous bloggers, structural embeddedness of blogger-follower and relational embeddedness of blogger-follower do not significantly affect switching costs. In this case, H2a and H2b are thus not supported.

Analytical results indicate that structural embeddedness of blogger-message positively affects switching costs. Bloggers with a higher degree of structural embeddedness of blogger-message implies that bloggers can use many functions and services; in addition, they heavily depend on blog websites. For instance, some bloggers only use the daily record function, while some operate functions of daily records, photos, multimedia, and layout. When bloggers with a high degree of structural embeddedness of blogger-message want to switch to other blog websites, they must consider how to transfer information (e.g., articles, photos, and layouts) derived from the current blog website; they must also consider how to learn and operate the new blog website. These forms of high perceived learning costs of using the new blog website contribute to higher retention intention [Burnham et al., 2003]. Analytical results of this study (H3a) confirm the notion.

However, analytical results indicate that relational embeddedness of blogger-message negatively influences switching costs. Relational embeddedness of blogger-message refers to how often bloggers use the functions and services provided by the blog website. When using the system's functions frequently, users are familiar with them. Literature on computer self-efficacy indicates that self-mastery can influence the perception of computer self-efficacy [Compeau and Higgins, 1995]. Thus, when extremely familiar with functions of a blog website, bloggers can quickly figure out how to use other similar websites, thus causing lower learning costs and lower retention intention. In this case, H3b is thus not supported.

Finally, this study verifies the relationship between switching costs and customer retention intention. The outcome closely corresponds to previous literature [Leibowitz and Margolis, 1994]. H4 is thus supported.

## 6. Implication and Conclusion

Based on literature of embeddedness and switching costs, this study develops antecedents of customer retention intention. This study significantly contributes to academic researchers in this field in the following ways. Although the social network perspective has been adopted in recent years to analyze the current status of blogs [Furukawa et al., 2007; Marlow, 2004; Ali-Hasan and Adamic, 2007], blogger retention intention has seldom been examined based on the perspective of network embeddedness. Therefore, based on sociological and economic perspectives, this study proposes a model of antecedents influencing bloggers' retention intention on blog websites. As for social embeddedness types influencing bloggers' retention intention, this study develops six modes of social embeddedness on the blog context: structural embeddedness of blogger-blogger, relational embeddedness of blogger-blogger, structural embeddedness of blogger-follower, relational embeddedness of blogger-follower, structural embeddedness of blogger-message, and relational embeddedness of blogger-message. These types are further applicable to extend the literature of social embeddedness. Moreover, this study integrates the six types of social embeddedness with the concept of switching costs to elucidate and verify the relationships among structural embeddedness of blogger-blogger, relational embeddedness of blogger-blogger, structural embeddedness of blogger-follower, relational embeddedness of blogger-follower, structural embeddedness of blogger-message, and relational embeddedness of blogger-message and switching costs. Finally, previous research indicates that network embeddedness significantly influences individual behavior/intention [Granovetter, 1992]. This study integrates concepts of embeddedness and switching costs to verify switching costs as an important mediator between embeddedness and intention.

This study provides BSP with an interactive perspective to consider customer retention. Individuals inevitably face limited resources when maintaining human relationships. Individuals with strong ties have to spend time and effort to maintain such relationships [Granovetter, 1973]. However, each individual has limited time resources. Restated, the focus blogger is only allowed to keep a close connection with a certain number of friends (strong ties) and keep middle-degree or low-degree interactions with the remaining others (weak ties). Switching costs exist for bloggers to maintain both strong ties and weak ties when interacting with friends. Therefore, when wanting to switch to a new blog website, focus bloggers can bring friends with the strong ties with them, while it is hard to bring friends/followers with weak ones. Therefore, for BSP, this study recommends devising marketing strategies and website functions to help bloggers to make many new friends or re-connect with old ones. Such strategies should help increase the number of friends (weak ties) for bloggers. These strategies and website functions thus form an exit barrier, heighten switching costs, and retain customers. Also, BSP provide users with simple systems and functions. However, this study recommends designing more advanced functions for customers who blog frequently. For those bloggers, BSP can fulfill their deep needs with advanced and unique functions. The learning costs of these bloggers help reduce intention to switch. Restated, BSP can devise some functions in their system to enhance switching costs.

Despite its contributions, this study has certain limitations. This study adopts an online questionnaire and conducts sampling non-randomly, possibly leading to sampling errors. This study also collects data in a single time, which does not guarantee completion. If a longer time is allotted to view how each construct develops, a more thorough understanding could be achieved of how each construct influences one another. This study takes a Taiwanese blog website, Wretch, as a research context. As is expected, other blog websites might yield different user features, website functions, and managements. Therefore, the analytical results of this study are limited in the applicability to other blog websites. Future researches can explore the influences of switching cost in different types of blog websites.

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