Social Media Characteristics, Customer Relationship and Brand Equity

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This study adopted a customer-centric relationship perspective to investigate the influence path from social media characteristics to brand equity. 177 observations were collected from a professional marketing community in Taiwan for hypotheses test. Research results show that brand equity is significantly enhanced by a stronger online community customer relationship which is strengthened by social media knowledge sharing mechanism and platform quality. This study re-confirms the effects of customer-centric brand community integration on brand equity in online context and suggests that managers should consider the contingent effects in terms of social media characteristic-industry-fit when employing online brand community to enhance brand equity.

INTRODUCTION

The rapid development of social media and online communities has significantly changed the ways in which customers and enterprises communicate. Most companies, today, have set up official websites that provide customers with product- and service-related information. Despite having reduced marketing costs, these channels still only enabled one-way communication. On the other hand, social-media based online communities enable two-way communication, which allows companies to receive customers' feedback regarding their expectations of products and services efficiently, allowing them to respond to, and satisfy, customers' needs. Satisfied customers not only become loyal to certain companies, and continue to purchase their products and services, but are also glad to promote these products and services to their friends. They also grant higher appraisal of the company and so increase the equity of the whole brand. Brand equity is defined as a kind of asset or debt that consists of brand name, meanings and symbols. Brand equity can increase or decrease the supply value of a product or service and this value can belong to either companies or customers (Aaker, 1991). Online brand communities are usually built on a social media platform that is enabled by a variety of information and communication technologies. The customer's experience of using the social media platform influence her willingness to participate and effects the strength of her relationship with the company (Kim et al., 2008), which in turn can enhance brand equity (Muniz & O' Guinn, 2001). Many Taiwanese companies (such as ASUS, Acer, etc) use an online brand community to expand brand awareness and deliver relevant brand, service and product information. Given that companies adopt online brand communities, and use advanced information technologies, in order to promote and advertise their products and services, it seems plausible to assume that the characteristics of social media are able to significantly influence the establishment of brand equity

by enhancing relationships and interaction between a company and its customers. For e-commerce and IT managers, it is a challenge to increase brand equity through building meaningful relationships with customers in an online brand community. The purpose of this paper is to explore the effects of social media characteristics on customer relationships and brand equity, and to consider the mediate effects of customer relationships.

THEORETICAL HYPOTHESES

People gather together because of common beliefs, interests or ideas in both the actual and virtual world. Rheingold (1993) defined online communities as an Internet social aggregation, which gathers participants who have emotional interactions and discussions on specific agendas and develops interpersonal relationship networks. This kind of human communication and information sharing through electronic media and the Internet leads to a new prevailing social phenomenon (Romm et al., 1997). A group of Internet users with common interests and emotional connections will usually exchange information and establish virtual relationships through participating in discussions in online chat rooms (Chang et al., 1999). Once these relationships are established, people are likely to form a social group based on some obligation or common objective (Rothaermel & Sugiyamanb, 2001). In order to earn emotional support and share common interests, the members of an online community tend to present commitment behavior to the virtual social organization (Ba, 2001). When community members communicate with each other and develop continued relationships, the online community is regarded as a formal social community (Kim et al., 2008). Armstrong & Hagel (1996) argued that a successful virtual community needs three important business resources: brand, customer relationships and content.

An online brand community is society-oriented and is derived from conventional trade- or economic-oriented communities (Kim et al., 2008). Members exchange information, share product knowledge and offer solutions on social media platforms (Bagozzi & Dholkia, 2006; Muniz & Schau, 2005). An online brand community is based on maintaining or enhancing brand loyalty without suffering from geographic limitations in structure (McKnight et al., 2002), facilitates sharing or creation of brand knowledge (Rheingold, 1993). More and more companies believe that an online brand community can both facilitate effective and efficient communication with customers and provide access to valuable ideas generated by customers (Jang et al., 2008). The existing literature offers different ways of describing social media characteristics. Jang et al. (2008) identify a number of social media characteristics: information quality, system quality, interaction and rewards. Moreover, from the perspective of co-consumption and co-production, knowledge sharing activities within the community allow members to assist in the innovation of products and services (Fuller et al., 2008; Prahalad & Ramaswamy, 2004), thereby increasing their brand loyalty.

When the interaction between an information dispatcher and a receiver is strengthened, the virtual community becomes a social space in which participants can exchange information and gain emotional support (Burnett, 2000). The intensity of the interaction between the website and customer affects the customer's relationship over the Internet (Deighton, 1996). When interactivity with the website is high, this increases the member's trust and commitment to the online community (Watson et al., 1998). Cooley (1999) found that an interactive website has four advantages: it benefits the company's image, allows for the easy collection of public opinion, reflects customers' desires and enhances company responsibility. All of these advantages are about the company's relationship with the customer. Based on the literature, the following hypothesis is developed:

Hypothesis 1: Interactivity of social media positively influences customer relationship.

An online brand community is a social media site where members search and share information about a brand. Huizingh (2000) pointed out that the quality of the website can be assessed in terms of content architecture and user interface design. Delone & Mclean (2003) proposed an information system success model that speaks to system quality, information quality, system usability, user satisfaction, individual

influence and organization influence. An information system is influenced by information quality, which means that the information should be reliable and updated regularly in order to satisfy the system users (Yaya, 2011; Wang & Strong, 1996). Liu & Arnett (2000) verify that high information quality can both reduce customer's 'groping' time and increase perceived value, which enhances customer satisfaction when using the website. Park & Kim (2003) found that information quality and system reliability both positively influence customer relationship. Since social media is a kind of information system on which an online brand community is established, we hypothesize that platform quality includes both information quality and system quality, and is relevant to customer relationship. Therefore, the following hypothesis is developed:

Hypothesis 2: Platform quality of social media positively influences customer relationship.

Tsai (2000) pointed out that the reason for interaction in online communities is mutual communication and resource exchange among members. Online brand community members learn about, and come to understand, a company's products and brand by referring to relevant information and opinions provided by both the company and other members of the community. Online brand community members tend to share knowledge with each other and so exchange useful information and knowledge. Chiu et al. (2006) integrated social capital and social cognitive theories to construct a model for investigating the motivations behind the exchange of knowledge by members of virtual communities. No matter whether this takes place online or in offline brand communities, members share information and knowledge with one another about both the brand and its products. In order to facilitate knowledge flow in the brand community, companies need to establish an environment and mechanisms for knowledge exchange. The more knowledge that is shared among members, the deeper the relationships established with customers (Tai & Ho, 2010). Based on the concept of knowledge sharing mechanism, the following hypothesis is developed:

Hypothesis 3: Knowledge sharing mechanism of social media positively influences customer relationship.

Holmlund & Kock (1996) explained customer relationship management as a philosophy of customer-oriented management that continually creates satisfied customers and maintains actively profitable long-term relationships. McAlexander et al. (2002) proposed a customer-centric model to measure customer relationships in the brand community and developed a construct called 'Integration in Brand Community' (IBC) as a key factor for building a successful brand community. Ryan (1995) found that members are more satisfied with interpersonal relationships when they participate in a virtual community compared with when they engage in face-to-face interactions. Piskorski (2011) argued that a successful community strategy is one that helps members to create and maintain relationships with other members, whereupon they will be more willing to benefit the company. Brand equity consists of brand assets, which in turn consist of brand loyalty, brand awareness, perceived quality and brand associations (Aaker, 1991). Moreover, brand equity is created on the basis of a customer's recognition, and evaluation, of the company's brand and products, which is significantly influenced by the strength of relationships. Hence, this study develops the following hypothesis:

Hypothesis 4: Customer relationship positively influence brand equity.

METHODOLOGY

In order to test the research hypotheses, this study used an online survey method to collect data from a professional marketing community, UserXper Web Planning (UWP), in Taiwan. The research measured online brand community participants' perception about social media characteristics, customer

relationships and brand equity in order to examine the influence of each. UWP is an online community which attracts thousands of members interested in digital marketing and webpage user interface design. Most of the members are active professionals in marketing related fields, which is why this study chose to cooperate with this online community. 387 UWP members who took part in digital marketing-related seminars were invited to fill in this survey of which 221 responded. Among the respondent data, 44 observations were discarded because of missing values and invalid responses, which made the final sample size for the analysis 177.

Of the respondents, 81 were male and 96 were female. 68% of respondents were younger than 30 years old and almost all respondents held university and above educational degrees. In terms of the duration of time that the respondents participated in the online brand community, 72% participated for less than a year and 10.7% participated for longer than two years; 40.7% of respondents reported that the online brand community in which they participated belonged to the high technology industry, 24.9% belonged to manufacturing companies and 34.5% belonged to the service industry. Further demographic information is shown in Table 1.

TABLE 1
DEMOGRAPHIC INFORMATION OF SAMPLE

Attributes	Values	Frequency	Percentage
Gender	Male	81	45.8
	Female	96	54.2
Age	Under 20	2	1.1
	21-30	119	67.2
	31-40	45	25.4
	Over 40	11	6.2
Education	High school or below	6	3.4
	University	112	63.3
	Graduate school	59	33.3
Time of participating the online brand community	Under one month	19	10.7
	1-3 months	33	18.6
	4-6 months	41	23.2
	7-12 months	34	19.2
	13-24 months	31	17.5
	Over 25 months	19	10.7
Industry type of the online brand community	High technology	72	40.7
	Manufacturing	44	24.9
	Service	61	34.5
Note: The number of respondents = 177			

MEASUREMENT

Social Media Characteristics

Interactivity

Interactivity, as a combination of rich content, active intelligence and collaborative communications, creates a compelling user experience in business settings. Ha & James (1998) reexamined the concept of

interactivity and proposed that interactivity be defined as the extent to which the communicator and the audience respond to each other's communication needs in terms of five dimensions of the construct. The degree to which virtual communities, which have the ability to provide both interpersonal and informational interactions among members, can be seen as specifically information-oriented social spaces as well as the characteristics of virtual communities in terms of their support for information exchange can be measured by interactivity. (Burnett, 2000). Given that an online brand community is a social space enabled by computer-mediated communication technologies, we drew upon similar concepts, and focused particularly on interpersonal and informational interaction, for measuring the construct of interactivity.

Platform Quality

Information quality refers to the provision of valuable data and information in the timely manner of content updates. System quality refers to the maintenance of a reliable and accessible functionality that helps customers to search and share information quickly and conveniently (Zeithaml et al., 1996). Jang et al. (2008) suggest that both of these quality indicators influence commitment to an online community. In this study, we considered online brand community commitment to be part of an integrated customer relationship, and so we combined information quality and system quality into a single construct, namely platform quality. Nelson et al. (2005) pointed out that the determinants of information quality should include accuracy, completeness, currency and format of produced information. In addition, the determinants of system quality are accessibility, reliability, response time, flexibility and integration of the information system. This study, therefore, measured platform quality by the dimensions of information quality and system quality proposed in the literature.

Knowledge Sharing Mechanism

A knowledge sharing mechanism facilitates knowledge transfer between people and is usually able to augment the value of knowledge through speeding up and expanding knowledge distribution. The links between intra-organizational members are able to create knowledge flow for exchanging specific concepts and understandings (Tsai, 2000). Davenport et al. (1998) suggest that organizations establish an internal knowledge market for creating and distributing knowledge in real and virtual interactive space. Based on these points, we measured the knowledge sharing characteristic of social media in terms of the links between members and the incentive mechanism that facilitates member communication and information/knowledge exchange.

Customer Relationship

McAlexander et al. (2002) developed the construct of integration in brand communities with a focus on customer-centric relationships. IBC has four dimensions, owner-product relationships, owner-brand relationships, owner-company relationships and owner-owner relationships, which can be used to measure the extent to which a brand community integrates relationships. We think that the characteristics of social media influence relationship building and maintenance in online brand communities and that, given this, IBC is a good indicator for measurement. Accordingly, this study borrowed similar question items from the IBC construct to measure customer relationships in an online brand community with the company, its products, brands and other customers.

Brand Equity

Brand equity refers to the value of a brand to the firm or customer (Kamakura & Russell, 1993) and is a kind of corporate asset that benefits a company or a product in terms of brand loyalty, brand name awareness, perceived brand quality and brand associations (Aaker, 1992). Aaker (1996) also proposed a set of measures, grouped into five categories, for evaluating and tracking brand equity over products and markets. Based on the literature, this study adopted price premium, perceived quality, perceived value, awareness and repurchase intention for measuring brand equity in the context of an online brand community. This study measured all constructs, using multiple items, with a five-point Likert scale.

ANALYSIS AND RESULTS

Instrument Validation and Descriptive Statistics

For instrument validation, a confirmatory factor analysis was performed to assess convergent and discriminate validity. The factor loadings of all measurement items ranged from 0.64 to 0.84, which indicates that convergent validity is moderately acceptable (the details of the validation information are given in Table 2). We also assessed construct reliability by calculating composite reliability to respective latent variables as suggested by Segars (1997). The estimates of composite reliability of latent variables ranged from 0.77 to 0.88, significantly higher than the threshold of 0.7 suggested by Jo¨reskog & So¨rbom (1989). The Cronbach's α of all the latent variables exceeded 0.7, which is the threshold suggested by Sharma (1996).

TABLE 2
FACTOR STRUCTURE MATRIX OF LOADINGS AND CROSS-LOADINGS

Scale Items	ITA	PFQ	KSM	CRI	BEQ
Ita1	0.84	0.58	0.42	0.35	0.35
Ita2	0.76	0.35	0.41	0.25	0.26
Ita3	0.73	0.41	0.38	0.30	0.28
Pfq1	0.56	0.66	0.47	0.32	0.36
Pfq2	0.27	0.73	0.41	0.37	0.36
Pfq3	0.38	0.79	0.37	0.36	0.30
Pfq4	0.53	0.78	0.47	0.40	0.37
Ksm1	0.43	0.48	0.73	0.40	0.37
Ksm2	0.37	0.46	0.71	0.44	0.45
Ksm3	0.34	0.33	0.75	0.45	0.42
Cri1	0.29	0.39	0.41	0.75	0.52
Cri2	0.23	0.27	0.47	0.64	0.51
Cri3	0.35	0.36	0.44	0.69	0.60
Cri4	0.25	0.38	0.49	0.81	0.57
Cri5	0.35	0.40	0.43	0.79	0.61
Cri6	0.28	0.40	0.40	0.78	0.61
Beq1	0.31	0.37	0.38	0.55	0.79
Beq2	0.32	0.37	0.45	0.53	0.73
Beq3	0.36	0.33	0.44	0.55	0.67
Beq4	0.23	0.30	0.37	0.56	0.78
Beq5	0.15	0.29	0.39	0.54	0.69
Beq6	0.32	0.40	0.44	0.61	0.72

Note: ITA: Interactivity; PFQ: Platform Quality; KSM: Knowledge Sharing Mechanism; CRI: Customer Relationship Integration; BEQ: Brand Equity

Nevertheless, composite reliability cannot reflect the extent to which variance is captured by the constructs. Therefore, an average variance extracted (AVE) estimate is adopted to acquire this information. Fornell & Larcker (1981) suggested that an acceptable AVE estimate should be higher than

0.5 for a construct's measure. In this study, all AVE estimates, with ranged from 0.54 to 0.61, were above this cut-off value (detailed information of measurement reliability and validity are shown in Table 3).

TABLE 3
CORRELATION MATRIX, CRONBACH'S α, AVE AND COMPOSITE RELIABILITY

Construct	Cronbach's α	AVE	CR	ITA	PFQ	KSM	CRI	BEQ
ITA	0.76	0.61	0.82	0.78				
PFQ	0.72	0.55	0.83	0.29	0.74			
KSM	0.71	0.54	0.77	0.22	0.28	0.73		
CRI	0.84	0.56	0.88	0.09	0.14	0.15	0.75	
BEQ	0.82	0.54	0.87	0.19	0.27	0.16	0.27	0.73

Note: Square of root of AVE for each construct is shown in the diagonal of the correlation matrix. ITA: Interactivity; PFQ: Platform Quality; KSM: Knowledge Sharing Mechanism; CRI: Customer Relationship Integration; BEQ: Brand Equity

Hypotheses Test

The study employed the partial least squares (PLS) method to test the research hypotheses using open source software VisualPLS 1.04b1 (Fu, 2006). The test results show that social media platform quality (PFQ) and knowledge sharing mechanisms (KSM) significantly influence an online brand community's customer relationship integration (CRI) at the significant level 0.05, which supports hypotheses H2 and H3. However, the influence of social media interactivity (ITA) on an online brand community's CRI is not significant, meaning that hypothesis H1 is not supported in this study. The R^2 of the online brand community's CRI is 0.382; therefore, the overall social media characteristics can explain 38.2% variance of the online brand community's CRI. The path from the online brand community's CRI to brand equity (BEQ) is significant with a 0.05 level and a coefficient 0.77, hence hypothesis H4 is supported. The R^2 is 0.585, which indicates that an online brand community's customer relationship integration is an important mediating factor if a company wants to enhance brand equity through a social media online community (the model test results are shown in Figure 1).

FIGURE 1
MODEL TEST RESULTS

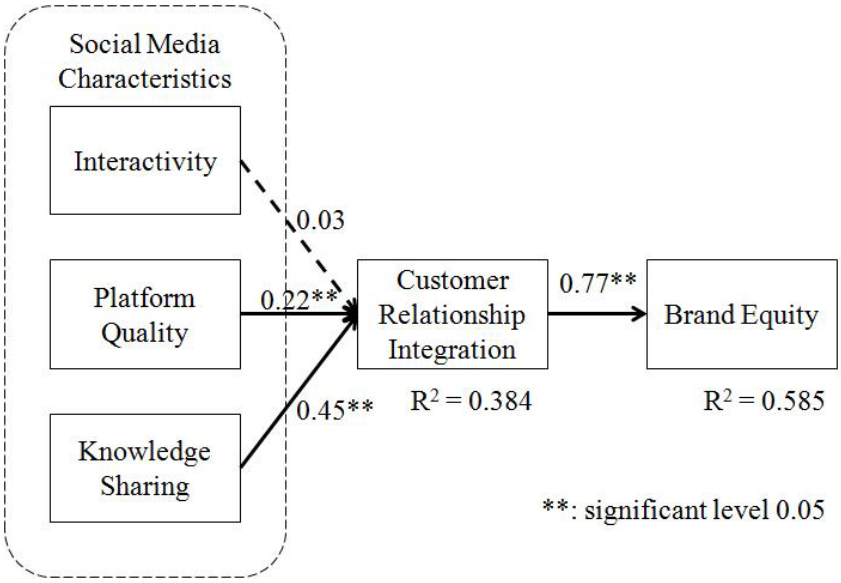
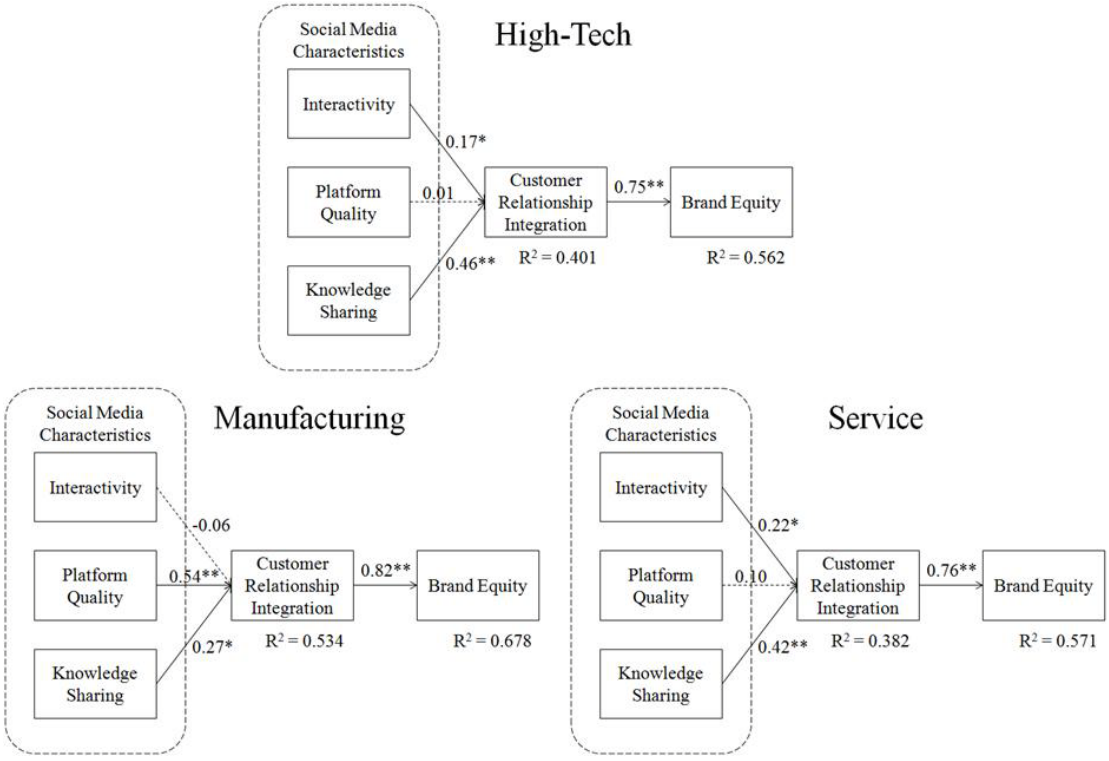


FIGURE 2
PATH ANALYSIS BY INDUSTRY TYPE OF ONLINE BRAND COMMUNITY



Path Analysis by Different Industry Type

Considering that the industry type of an online brand community might have significant impacts on the effects of hypothetical influence paths, this study also tested the theoretical model with data that was categorized into three groups representing high-tech brands, manufacturing brands and service brands respectively. Figure 2 exhibits the test results and detailed statistics for the path analysis of the three types of online brand community.

For the high-tech brand community, PFQ is the only social media characteristic that is not significant in the path coefficient. KSM is the most significant social media characteristic at a significant level 0.05, in comparison with the less significant social media characteristic ITA at significant level 0.1. The three social media characteristics jointly account for 40% of the variance of construct CRI for which the R^2 is 0.401. The influence of CRI on BEQ is significant with the path coefficient of 0.75 and an R^2 of 0.562. For the manufacturing brand community, the influence of ITA on CRI is not significant. PFQ is the most significant social media characteristic at the significant level 0.05, while the influence of KSM on CRI is significant at level 0.1. The social media characteristics jointly account for 53.4% of the variance of construct CRI. The influence of CRI on BEQ is significant with the path coefficient 0.82 and an R^2 of 0.678.

As for the service brand community, like the high-tech brand community, the KSM is the most significant social media characteristic with the path coefficient 0.42 at a significant level of 0.05. The path from ITA to CRI is significant at level 0.1, and the social media characteristic PFQ is not significant. The three social media characteristics jointly account for 38.2% of the variance of construct CRI and the influence of CRI on BEQ is significant with a path coefficient 0.76 and an R^2 of 0.571. From the path analysis, we found that high-tech and service brand communities have similar influential paths from social media characteristics to brand equity through mediating construct-customer relationship integration. However, the manufacturing industry's brand communities have different influential paths in comparison with the other two types of brand communities. Platform quality is the most significant factor in influencing customer relationship integration but is insignificant in relation to the CRI of high-tech and service brand communities. On the other hand, interactivity is moderately significant to CRI in both high-tech and service brand communities, while the influence of ITA on CRI is insignificant in the manufacturing brand community. In this study, we identify companies that sell information and communication technology, bio-technology or medical equipment as high-tech brand companies. We identify companies that sell non-high-tech products, such as bicycles or furniture, as manufacturing brands. The test results imply that if manufacturing brand companies want to increase brand equity through online community operations, they should not overlook the provision of high quality information and system reliability. As for high-tech and service brand companies, knowledge sharing mechanisms should be the most emphasized social media characteristic because high-tech products are relatively complex to use and service products are invisible and not pre-testable for evaluation. This means that customers are looking for product knowledge sharing in online brand communities.

CONCLUSION

Summary of Results

Information and communication technology materialize social network platforms, which allows people to easily establish an identity and share values in the virtual community. Through intensive interaction and knowledge sharing in cyber space, community members can build close relationships with each other thereby strengthening their relationship with the brand, product and company (McAlexander et al., 2002). With more and more companies establishing online brand communities to deepen customer relationships and enhance brand equity, this study reveals and endorses the positive marketing value of online brand community management. The literature shows that community members' thoughts about interactivity, platform quality and knowledge sharing mechanisms influence their participation and reinforce community relationships, which in turn enhances brand equity. Given this, this study adopted a

customer-centric relationship perspective to investigate the influence path from social media characteristics to brand equity.

The research results show that brand equity is significantly enhanced by stronger online community customer relationships, which in turn are strengthened by the following social media characteristics: knowledge sharing mechanisms and platform quality. The findings of the study, therefore, support hypotheses H2, H3 and H4 but not H1. However, the effects of social media characteristics on customer relationship integration could vary by different industries. Through an industry-specific path analysis, for example, this study found that knowledge sharing mechanisms are the most significant social media characteristic to influence customer relationship integration for high-tech and service brand communities, and that customer relationship integration is primarily influenced by platform quality for manufacturing brand communities.

Theoretical and Managerial Implications

Several theoretical implications can be drawn from these results. To our knowledge, the relationships between social media characteristics, customer relationship and brand equity have not been discussed in the context of online communities in prior studies. The results of this study are a starting point for relevant research and establish basic understandings of consumer behavior in online brand communities. This study re-confirmed the effect of customer-centric brand community integration on brand equity (McAlexander et al., 2002) in the online context and argued that the effects of different social media characteristics on customer relationship integration vary by industry type. Furthermore, the mediating effect of customer relationship integration in this theoretical model is confirmed in both general and industry-specific path analysis. This study also expanded on the model proposed by Kim et al. (2008), which only examined the effects of online community characteristics on commitment. This research integrated prior studies for proposing a new model, the results of which contribute to our understanding of how to enhance brand equity through online brand community operation and management.

This study also has implications for practitioners and business managers. First, establishing an online brand community is an effective way to enhance a company's brand equity as long as customer relationships are strengthened. An integrated customer relationship consists of customer-to-customer, customer-to-product/service, customer-to-company and customer-to-brand relationships, which can improve integration in the brand community. Second, platform quality and knowledge sharing mechanisms influence the extent of customer relationship integration in online brand communities. However, the effects vary in different industries. For high-tech and service companies, knowledge sharing mechanisms are the most important way to increase customer relationship integration and, thereby, enhance brand equity. This is probably because high-tech products are relatively complex, service products are invisible and not pre-testable for evaluation. For non-high-tech manufacturing companies, platform quality is most important for enhancing brand equity, possibly because customers are more familiar with conventional products and so knowledge sharing needs are lower in comparison with high-tech and service brand communities.

Limitations and Suggestions

This study has certain limitations although steps were taken during both hypotheses development and data collection. First, despite the fact that we referred to previous research for developing a measure scale of constructs, some original items were dropped because they did not pass the convergent validity test. Second, the industry-specific path analysis was executed with a relatively small sample size, which leads to an inability to adopt structural equation modeling techniques to test the theoretical model. Third, although the index of broadband penetration in Taiwan ranks in the top six in the world (Huggins et al., 2008), which implies that consumer behaviors in online communities are worth studying, cultural factors were not included in this study, and should be taken into account when applying the research results. Fourth, this study employed a cross-sectional design to examine the relationships between consumer's perceptions on social media characteristics, customer relationship integration and brand equity, and so all

hypothetical causal relationships can only be regarded as inferred rather than proven. Given the above limitations, further research should be cautious when explaining and applying the research results.

Some suggestions are proposed here for further studies. First, while the effects of industry type were preliminarily verified in this study, an investigation using a large sample size is required. Second, as this study was conducted in Taiwan, further studies are encouraged to include cultural factors into the model. Finally, longitudinal studies are worth conducting in order to compare findings with those of cross-sectional research and thereby extend our understanding of this topic.

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