





Article

What Drives Continuance Intention towards Social Media? Social Influence and Identity Perspectives

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Received: 2 August 2020; Accepted: 28 August 2020; Published: 30 August 2020



Abstract: With the growth of social media communities, people now use this new media to engage in many interrelated activities. As a result, social media communities have grown into popular and interactive platforms among users, consumers and enterprises. In the social media era of high competition, increasing continuance intention towards a specific social media platform could transfer extra benefits to such virtual groups. Based on the expectation-confirmation model (ECM), this research proposed a conceptual framework incorporating social influence and social identity as key determinants of social media continuous usage intention. The research findings of this study highlight that: (1) the social influence view of the group norms and image significantly affects social identity; (2) social identity significantly affects perceived usefulness and confirmation; (3) confirmation has a significant impact on perceived usefulness and satisfaction; (4) perceived usefulness and satisfaction have positive effects on usage continuance intention. The results of this study can serve as a guide to better understand the reasons for and implications of social media usage and adoption.

Keywords: social identity; group norms; image; perceived critical mass; expectation-confirmation model (ECM); social media

1. Introduction

People now use various forms of online social media to carry out many different activities of social interaction. Companies and other organizations are also making use of social media communities to promote their brands with related fan pages being very common. The operators of social media communities work to attract more people by offering interesting and plentiful content, as well as continuous, uninterrupted interactions, as such efforts can attract more users, and thus increase the related organizations market profile.

Virtual communities are interactive platforms among Internet users or between users and businesses, and there is fierce competition among such communities. The number of virtual community users, or the additional services offered, recognition, usability and other factors, will affect users' willingness to participate in a virtual community. The company brand hopes to increase its popularity, and the sustainable usage of fan pages has become the norm to achieve this. Social media community

operators aim to improve the contents in virtual communities to attract more users, as this would allow the community to be viable and sustainable viability, thus increasing its business activities and value. The development of the Internet has brought about a socialization of information, and the user's life has been inseparable with the network. In the era of Web 2.0, the operation of the websites has shifted to social media communities as the main focus of development [1–3]. As the Internet has evolved over time in different forms and applications of media, it has changed traditional forms of interpersonal interaction and created new communication bridges among people, such as online groups.

In recent years, plentiful empirical research has assessed the behavior of social media in different environments, such as the educational environment [4,5], knowledge sharing [6], and leisure environment [7,8]. However, members of virtual communities are not just information seeking, but also to seek social interaction and friendship [2]. The concept of social identity has been applied for investigating the usage behavior of information systems in previous research, but has rarely been used for investigating the formation characteristics of social media. Scholars have also identified social identity as one of the important factors influencing the operation of virtual communities [9–11]. Social identity is the feeling of belonging and identification in a community and the pride of being part of that community. Therefore, social identity also helps users to maintain positive interactions with other members of the virtual community and allows users to participate more actively in the community [12,13]. Therefore, social identity is an important research topic in both marketing and online group activities.

On the other hand, human beings are predominantly gregarious, and the impact of such online communities on individuals should be taken into account when discussing the acceptance of science and technology. Prior studies pointed out that group members tend to categorize social norms and change personal attitudes and behavior under group pressure [14]. Therefore, the consumer's personal cognitive behavior will be affected by the social communities and peers they engage with. When a website reaches a critical number of users, it will positively affect the consumer's attitudes and willingness to act [15]. This is quite different from the business model of earlier previous discussion areas or message boards. Therefore, this article attempts to construct an integrated model to explain and predict consumers' behavior of using social media and relevant determinants (i.e., group norms, critical mass and image) in viewpoints of social identity.

2. Literature Review and Theoretical Background

2.1. Social Identity

Social identity theory emphasizes the sequences of categorization and comparison that conduct individuals' perceptions of a group or organization, such as their prestige or uniqueness, and elicit identification with them [16]. A perception of community is a critical characteristic of face-to-face communication or interaction among the members of a group. Social identity refers to an individual's sense of identity in relation to a group. In other words, if an identity is from a community of individuals who belong to this community, then this is social identity. Here, it was worth noting that when customers developed a greater sense of identification with a company, they were more likely to support that company [9,17]. Prior research about social identity showed that intergroup encounters enhance identification and reduce polarization generally [17–19].

The sense of social community is an important feature of face-to-face communication or interaction among the members of a group [19,20], and thus the degree of identification with the social community will affect its operations [21]. Several studies have also highlighted how social identity can be applied to social media groups and shown how it is an essential determinant in this context [9,10,20]. A highly social identity can help users to interact with other virtual community members actively, and participate more aggressively in the group [12,13].

2.2. Group Norms

Theory of reasoned action (TRA) was constructed by Fishbein and Ajzen [22] to understand the relationship between attitudes and behaviors in relation to specific actions. Behavioral intention is a function of both attitudes and subjective norms toward the focal behavior, and a stronger behavioral intention makes it more likely that a person will perform that behavior.

Postmes et al. [23] stated that group norms define the communication patterns within a group and that conformity to such norms increases over time. Many studies have aimed to better evaluate the role of the social influence utilized by social media groups on its members [12,24–27]. Cialdini and Goldstein [28] suggested that group norms are more likely to influence behavior in situations when there is greater uncertainty about the correct behavior. If an individual is unsure what they should do, they will be likely to be influenced by what others do around them. When the norms of community commitment are accepted by individuals, then this is called the consistency of norms. Therefore, group norms are also important variables of social influence and are formed through the process of social influence. Shen, Cheung, Lee and Chen [13] suggested that group norms are adopted by an individual because they share similar goals and values with others in the social network. Most important of all, group norms influence an individual's willingness to participate and the level of social interaction in a virtual community [12,27].

2.3. Image

Boulding [29] defined an image as the sum of what we think we know and what makes us behave the way we do. Thus, in this case, image is a subjective concept that a person possesses and it can also convey a person's behavior. Images could be transformed or changed by messages containing symbols, experiences, information and other outcomes. Moore and Benbasat [8] pointed out that image was based on the extent to which the use of innovation is perceived to enhance a person's image or status within their particular system. The concept of an image could be applied to different fields and, in the context of comparisons between brands, can be called brand image. It can also be applied to corporations, as the corporate image. This study defines image as the degree to which people use an innovation in a social community to enhance their personal image or status [8,18,30,31].

Chen, Yen and Hwang [2] found a positive linkage between image and the intention to keep using a community network, such as Facebook or online forums. As for personal cognition, there was a correlation between the promotion of personal image and social interaction [30]. This research improves the concept of image to social media communities and further analyzes user's feelings in this context.

2.4. Perceived Critical Mass

Metcalfe [32] stated that, in a network of N users, the value seen by each user is proportional to $N-1$ other users, so the total value of the network grows with $N*(N-1)$ or, for large N s, with N squared. In other words, the value of the network increases along with the number of users, with this greater value further increasing the number of users, and so on. When the amount of Internet adopters spans a critical mass, the effects of each additional person will be greater. Stated in other words, when a virtual community has many people engaged in its discussions, then this will attract even more people to take part. Once a critical mass is achieved, the number of users then enlarges rapidly. As a result, virtual community operators must work to push the number of users to reach this critical mass.

The diffusion of innovations manifests itself in different ways and is strongly influenced by the type of adopter and the innovation decision-making process [33]. Rogers [33] mentioned that the categories of adopters in the literature are innovators, early adopters, early majority, late majority, and laggards, as defined by the level to which a person accepts a fresh opinion. At some point within the adoption curve, an innovation may reach a critical mass. A critical mass of users is thus considered to be a critical determinant in social influence, as users will then interact with each other in different

groups. Kim and Kim [34] proposed that, once a critical mass is reached, diffusion continues at exponential growth, finally reaching the stabilization phase. It was important to note that this critical mass was based on a perception and not a specific point in the diffusion process [15]. Existing studies also stated that users' perceptions of critical mass are realized as the preference for acceptance of groupware while online services are fruitfully implemented [2,15,35,36]. The concept of critical mass can explain most human behaviors, because personal behavior is often affected by the number of people who have adopted an idea. In the context of this study, if more people have adopted an innovation in a virtual community, the possibility of adoption by others will increase.

2.5. Expectation-Confirmation Model

Oliver [37] initially introduced the Expectation Confirmation Theory (ECT), which was mainly used to study consumer satisfaction. The basic concept of ECT was that consumers judge satisfaction by comparing pre-purchase expectations with performance. The process of re-purchase intention [37]. Firstly, at the first point of time (t_1) before purchase, consumers will have expectations about the product. After using the product, at the second point of time (t_2), the consumer will recognize the performance of the product based on his or her actual feelings.

However, some scholars have proposed a modified model of expectation recognition theory for different applications, for example, Bhattacharjee [38]. Bhattacharjee [38] argued that Oliver's expectation validation theory ignores the fact that original and actual expectations change over time, and that Bhattacharjee [38] also proposed that system persistence behavior is similar to repurchase behavior, as the act of engaging in this behavior was similar to the act of buying again. The decision-making process consisted of three stages—initial decision, initial use experience, and post-use experience—each of which may change the consumer's subsequent behavior. Bhattacharjee [38] proposed the Expectation-Confirmation Model (ECM) and suggested that, in an information system/technology (IS/IT) environment, users' intention to continue using the system was determined by their satisfaction with using the system and perceived usefulness of continuing to use the system. User satisfaction, in turn, is affected by the perceived usefulness and confirmation of expectations that users have experienced from previous information system usage. Past empirical research has shown that ECM is effective in explaining consumers' continued use of intentions [6,39–44]. Therefore, this study uses ECM as the basis for an empirical study of users' intention to continue using social media.

3. Research Method

3.1. Research Hypotheses Development

Group norms define communication patterns and expectations within groups. Prior studies about virtual communities also took social influence factors into consideration [12,24,25,45]. According to Shen, Cheung, Lee and Chen [13], group norms were defined as the consensus among community members with regard to their common expectations and goals. In addition, Dholakia, Bagozzi and Pearo [12] indicated that group norms had the positive affect on collective intentions to towards online communities. When people join a virtual community, they can understand its values, goals, and norms. If their values are consistent with the goals of other members in the community, they will form a sense of identity with it. This study defines group norms as when an individual's behaviors in the virtual community are subjected to pressure from its members and environment, and thus posits the following:

Hypothesis 1. *Group norms have a positive impact on social identity.*

Oliver [46] defined a critical mass of users as when the related people have some social intentions that arise when the number of participants goes beyond a specific point in the innovation diffusion process. The role of relevant research on the perceived critical mass in the dissemination of information technology has been paid to considerable attention. For example, Lou, Luo and Strong [15] highlighted

that perceived critical mass as a key factor that influences an individual's decision to accept the groupware technology. Network externality depends on the linked value of user numbers, and the size of the user base affects the determination of the value of a product or service [47]. Jing [48] pointed out that the information technology products often have the characteristics of network externality, such as software and online services, including online communities. Therefore, this study defines the perceived critical mass as the basis for a collective action when the number of users reaches a certain number, and posits the following:

Hypothesis 2. *Perceived critical mass has a positive impact on social identity.*

Venkatesh, Morris, Davis and Davis [31] reviewed the related research and integrated eight models discussed in the previous literature to present the Unified Theory of Acceptance and Use of Technology, where social influence is one of the core determinants of the use of information technology. In addition, Chen, Wu, Wu and Chen [18] also found the positive linkage between image and social interaction tie. Therefore, we posit the following hypothesis:

Hypothesis 3. *Image has a positive impact on social identity.*

Social identity theory explains that part of a person's self-concept comes from the group they belong to [16]. A person's self-concept is thus related to other people or groups [45]. We are not separate individuals, but group or community members, thus giving rise to the so-called sense of community. This is an important characteristic of face-to-face communication or interaction among the members of the group [20,49–51]. In addition, the expectations and trust that exist in relation to the sense of community are two factors that influence the members of the community [51].

Song and Kim [52] argued that social identity was a key factor that influenced the intention to use specific technologies or systems on online activities. Kwon and Wen [53] indicated that social identity influenced perceived usefulness significantly. If individuals had higher recognition of their communities, they will have greater willingness to participate and share information in the affairs of the online communities. Several studies have also indicated that social identity should be considered on online communities and be a key influencer in their operations [9–11]. Social identity also helped users to engage actively with other members of the social media groups and participate more actively [12,13]. Taken together, we propose the following hypotheses:

Hypothesis 4. *Social identity has a positive impact on perceived usefulness.*

Hypothesis 5. *Social identity has a positive impact on confirmation.*

Davis [54] proposed the technology acceptance model (TAM), which claims that system usage can be influenced by the motivations of users: the perceived usefulness and perceived ease-of-use. From the prior research results, we found the perceived usefulness positively affected their satisfaction towards different information services [39,40,44,55,56]. Therefore, we propose the following:

Hypothesis 6. *Perceived usefulness has a positive impact on satisfaction.*

Satisfaction, perceived usefulness and the confirmation of expectations are, by previous empirical studies, found to be the key determinants of adoption in a variety of information services [40,41,44,56]. Similarly, other studies, such as Premkumar and Bhattacharjee [57] and Chen, Liu and Lin [39], have consistently shown the positive linkage among confirmation, perceived usefulness, satisfaction. As a result, ECM posited that users' perceived usefulness and satisfaction of information services had a positive influence on their intention to continue relevant information services usage. Lastly, ECM also

assumed that the confirmation of expectations of users affected positively their perceived usefulness towards information services. Therefore, we posit the following hypotheses:

Hypothesis 7. *Perceived usefulness has a positive impact on continuance usage intention.*

Hypothesis 8. *Confirmation of expectations has a positive impact on perceived usefulness.*

Hypothesis 9. *User confirmation has a positive impact on satisfaction.*

Hypothesis 10. *User satisfaction has a positive impact on continuance intention.*

According to hypotheses development, we proposed the research framework for this study (as shown in Figure 1). In this study, we applied an online questionnaire to collect empirical data. According to the purpose of the study, its structure and the operational definition of the constructs were organized. The questionnaire was designed with reference to the relevant literature, and it was carried out with experts and scholars after several amendments were made. The variables used in this study were taken from the literature and included three exogenous constructs (i.e., group norms, critical mass, and image), four mediators (i.e., social identity, perceived usefulness, confirmation, and satisfaction) and one endogenous construct (continuance intention), as shown in Table 1.

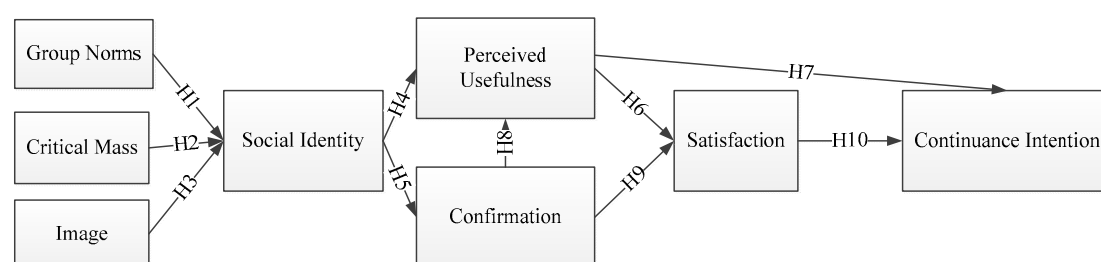


Figure 1. Research Framework.

Table 1. Definitions of constructs.

Construct	Definition	Source
Group Norms	The perception of social pressure to perform a behavior in the social media platforms or not.	[12,15,31]
Perceived Critical Mass	When the number of participants in social media reaches a majority of a user's awareness, the user's propensity to use the media is generated.	[15,47]
Image	The extent to which the use of social media applications within a particular social group can enhance an individual's image or status.	[2,18,31]
Social Identity	The extent to which the social media user categorizes himself/herself as a member of the social media groups.	[12,52,53]
Perceived Usefulness	The extent to which a social media user is confident that the social media can improve their friendship with others.	[39,54]
Confirmation of Expectations	The extent to which social media users perceive their initial expectations as being confirmed after actual adoption	[38,39,44]
Satisfaction	A positive perception resulting from an overall evaluation based on prior experience using social media	[39,44,58]
Usage Continuance Intention	The extent to which a social media user intends to re-patronize a related service consistently in the future, thereby causing repeated participation in the same social media community.	[38,39,44]

3.2. Procedure and Sampling

This study investigated users in a social media community, and the main respondents are Taiwanese users on systems including Facebook and Weibo. We used an online questionnaire to collect data, because social media community users are used to interacting online. A web-based questionnaire was designed with the Google Docs' "Network Questionnaire" service, and the data were collected via an anonymous online questionnaire posted on a bulletin board system (PTT) and Facebook. Facebook and PTT were used as the sampling platform for this study because they are the two largest social media user groups in Taiwan [59]. We also used a lottery to give prizes of an 8G flash drive and attract more users to complete the questionnaire. Our questionnaire was online during three months and a total of 260 questionnaires were collected (as shown in Table 2). We deleted the invalid questionnaires, and the number of valid responses was 247, giving a 95% valid response rate.

Table 2. Sample framework.

Items	Options	Frequency	Percentage
Gender	Male	133	54%
	Female	114	46%
Age	Below 20-year-old	20	8%
	21 to 30-year-old	200	81%
	31 to 40-year-old	15	6%
	41 to 50-year-old	7	3%
	Above 50-year-old	5	2%
Which social media platforms have been used (Multiple choice)	Facebook	247	100%
	Plurk	102	41.2%
	iGoogle	83	33.5%
	Twitter	50	20.4%
	Weibo	33	13.5%
	Others	11	4.6%
Usage frequency of social media platform	Every day	221	90%
	1 to 2 days	14	6%
	3 to 5 days	5	2%
	7 days	2	1%
	Above 7 days	5	2%
usage length each time of social media platform	Below 30 min	40	16%
	30 min to 1 h	62	25%
	1 to 3 h	69	28%
	3 to 6 h	44	18%
	Above 6 h	32	13%

4. Empirical Data Assessment

4.1. Scale Validation

We adopted IBM AMOS 24 to estimate the impacts of the variables and verify the suitability of the empirical model. We apply structural equation modeling (SEM) for data analysis, including two phases: measurement model analysis (confirmatory factor analysis, CFA) and structural model analysis. CFA was applied to test the compatibility of the study with regard to reliability and validity analyses.

Then, we used structural model analysis to test the path influences among the latent variables. The results of the structural model analysis could provide the t-value of the normalized factor loadings and the coefficients of the hypothesized paths.

Three standards to evaluate the convergent validity of CFA. First, the reliability of each index is evaluated by means of standardized factor loadings. Second, as two standards, Cronbach's α and Composite Reliability (CR) are used to measure the reliability. Third, extracted average variance (AVE) measures the variance of variables caused by measurement error relative to the variance. As shown in Table 3, Cronbach's α and CR of all the latent variables are above 0.70, and AVE for all the constructs are higher than 0.5. The result indicates our empirical data reaches convergent validity.

Table 3. Reliability and convergent validity.

Construct	Indicator	Factor Loading	Cronbach's α	AVE	Composite Reliability
Group Norms (GN)	GN1	0.679	0.802	0.583	0.806
	GN2	0.733			
	GN3	0.867			
Perceived Critical Mass (PCM)	PCM1	0.551	0.697	0.457	0.709
	PCM2	0.606			
	PCM3	0.837			
Image (IM)	IM1	0.839	0.883	0.716	0.883
	IM2	0.818			
	IM3	0.881			
Social Identity (SI)	SI1	0.79	0.898	0.75	0.899
	SI2	0.929			
	SI3	0.874			
Perceived Usefulness (PU)	PU1	0.879	0.925	0.803	0.924
	PU2	0.893			
	PU3	0.917			
Confirmation (CONF)	CONF1	0.854	0.862	0.679	0.863
	CONF2	0.861			
	CONF3	0.754			
Satisfaction (SAT)	SAT1	0.854	0.875	0.641	0.875
	SAT2	0.861			
	SAT3	0.754			
	SAT4	0.751			
Continuance Intention (CI)	CI1	0.688	0.885	0.668	0.887
	CI2	0.946			
	CI3	0.895			
	CI4	0.71			

Discriminant validity analysis means that, when the multiple indicators of a trait have a certain degree of convergence, the indicators of the trait should also be negatively correlated with the measure of its opposing trait. In other words, the discriminant validity is mainly to test the degree to which measures of different traits are unrelated. In this study, the correlation coefficient between the traits is tested by the bootstrap method, and the confidence interval is 95%. When the confidence interval of each trait does not contain 1, it means that there is discriminant validity [60]. According to the analysis

result of this study, the confidence intervals of each trait do not contain the correlation coefficient 1 at a 95% confidence level. This implies that there is good discrimination among the traits (as shown in Table 4).

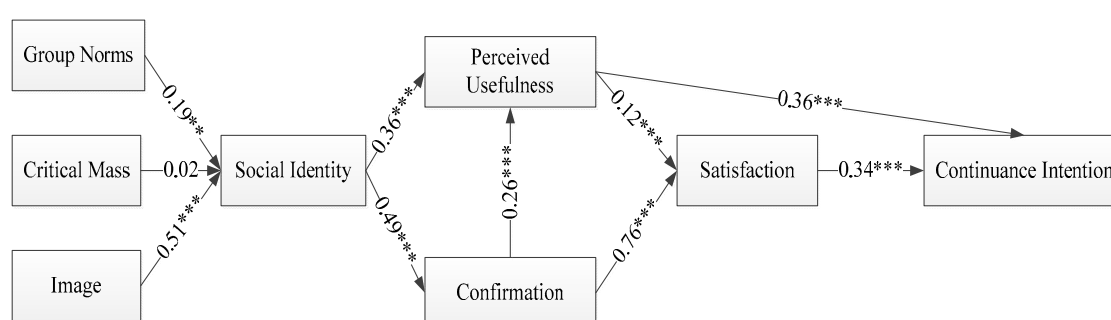
Table 4. Discriminant validity analysis.

Relationship	Correlation	Lower Bound	Upper Bound	<i>p</i> -Value
GN↔PCM	0.673	0.513	0.827	0.001
GN↔IM	0.597	0.455	0.723	0.002
GN↔SI	0.544	0.416	0.663	0.001
CM↔IM	0.434	0.279	0.570	0.003
CM↔SI	0.350	0.222	0.483	0.001
IM↔SI	0.659	0.502	0.791	0.003
PU↔CONF	0.477	0.361	0.593	0.001
PU↔SAT	0.513	0.394	0.617	0.002
PU↔CI	0.499	0.379	0.614	0.002
CONF↔SAT	0.920	0.878	0.962	0.002
CONF↔CI	0.407	0.297	0.522	0.001
SAT↔CI	0.529	0.406	0.627	0.003
GN↔PU	0.569	0.441	0.684	0.001
GN↔CONF	0.397	0.240	0.565	0.002
GN↔SAT	0.427	0.298	0.568	0.001
GN↔CI	0.488	0.338	0.631	0.001
PCM↔PU	0.548	0.407	0.676	0.002
PCM↔CONF	0.328	0.175	0.471	0.002
PCM↔SAT	0.393	0.252	0.525	0.002
PCM↔CI	0.697	0.567	0.809	0.001
IM↔PU	0.434	0.308	0.545	0.002
IM↔CONF	0.382	0.229	0.508	0.002
IM↔SAT	0.429	0.282	0.547	0.003
IM↔CI	0.292	0.165	0.400	0.002
SI↔PU	0.508	0.388	0.609	0.002
SI↔CONF	0.508	0.355	0.635	0.002
SI↔SAT	0.552	0.407	0.663	0.003
SI↔CI	0.355	0.247	0.474	0.001

Goodness-of-fit of measurement model was estimated using a variety of fit criteria. The root mean square error of approximation (RMSEA) is 0.066 (lower than 0.08), and the standardized root mean square residual (SRMR) is 0.530 (lower than 0.05). Whereas the goodness-of-fit index (GFI) is 0.868 (slightly lower than 0.90), the additional criteria including the comparative fit index (CFI), the incremental index (IFI), and the normed fit index (NFI) are all higher than 0.90 (CFI = 0.947, IFI = 0.934 and NFI = 0.903). These results indicate that the proposed measurement model in this research fitted well within our empirical data.

4.2. Structural Model Analysis and Hypotheses Testing

After testing the adaptability of the structural model to meet the basic criteria, we applied path analysis to test the hypotheses. In Figure 2 and Table 5, for the influence of group norms, perceived critical mass and image on the social identity, the path coefficient of group norms is 0.19, that of perceived critical mass is 0.02, and that of image is 0.51. This result indicates that the impact of group norms and image on social identity is significant, but that of perceived critical mass is not. For the influence of social identity on perceived usefulness and confirmation, the path coefficients are 0.36 and 0.49, respectively, which are significant. With regard to the impact of perceived usefulness on satisfaction and usage continuance intention, the path coefficients are 0.12 and 0.36, respectively, which are significant. For the effects of confirmation on perceived usefulness and satisfaction, the path coefficients are 0.26 and 0.76, respectively, which are also significant. Finally, the path coefficient of satisfaction on usage continuance intention is 0.34, which is also significantly positive.



Note: ** p -value < 0.01; *** p -value < 0.001

Figure 2. Standardized solution and hypotheses testing results of the SEM model.

Table 5. Summary of hypotheses testing.

	Hypotheses	β and p -Value	Support
H ₁	GN→SI	0.19 **	Yes
H ₂	PCM→SI	0.02	No
H ₃	IM→SI	0.51 ***	Yes
H ₄	SI→PU	0.36 ***	Yes
H ₅	SI→CONF	0.49 ***	Yes
H ₆	PU→SAT	0.12 **	Yes
H ₇	PU→CI	0.36 ***	Yes
H ₈	CONF→PU	0.26 ***	Yes
H ₉	CONF→SAT	0.76 ***	Yes
H ₉	CONF→SAT	0.76 ***	Yes
H ₁₀	SAT→CI	0.34 ***	Yes

Note: ** p -value < 0.01; *** p -value < 0.001.

5. Research Findings

This study divides social influence into group norms, perceived critical mass and image, and investigates the social identity of social media users. We also apply social identity theory to further explore usage continuance intention in a social media community. Our empirical analysis verifies our hypotheses, and a detailed discussion of the results is presented as follows.

For Hypothesis 1, our empirical results indicate that there is a significant, positive relationship between group norms and social identity. The group norms reflect the intrinsic values and norms of a social media community, and the social media users build a sense of belonging, which is a social identity. This implies that the social media users pay attention to the values and norms in social media communities by integrating their group norms into their own ideas and further forming identities in relation to these communities. Group norms reflect a sense of real life. The interactions that occur with others in a social media community, such as writing posts, responding to messages, playing games are different types of group activities, enable users to feel a real sense of group life in social media community. The stronger the group norms in a social media community, the more likely a user will form a social identity based on this. The operators of social media communities should thus pay attention to group norms and establish the values, norms or standards to promote the communities.

For Hypothesis 2, our empirical results indicate that there is no significant effect between perceived critical mass and social identity, a little different from the findings in the previous literature. The perceived critical mass represents the behavior of social participants' collective action when the number of participants in a social activity increases rapidly to a certain threshold. In fact, almost everyone is now a social media community user, and so it is now difficult to increase the number of users quickly. If the number of users increases slowly, the impact of perceived critical mass will not be so significant. In addition, awareness of personal data security is rising so that users do not post personal information or have too many unfamiliar "friends" in their own social media communities. Therefore, the number of users is no longer considered a key point in this context.

For Hypothesis 3, our empirical results indicate that there is a significantly positive linkage between image and social identity. The pressure of the social environment and the participation of friends and family are the main external factors of image, and the internal factors are the user's own interests, attitudes and psychology. If the position or image of an individual will improve in a group by joining a social media community, the user will spend more time using this service [31]. Social media users will compare the differences in their status before and after using, and, if they believe that joining the social media community has enhanced their social status, then a social identity will be formed in the virtual community, just as in real life.

For Hypothesis 4 and 5, our empirical results indicate that social identity has the significant statistically effect on perceived usefulness and confirmation. The social identity in a social media community will gradually cause users to see the benefits of this community, and will produce confirmation of expectations in the form of perceived usefulness towards social media platforms. The degree of confirmation is the difference between the user's expectations and actual experience, and a higher the degree of confirmation will develop after joining a social media community for a period of time.

For Hypothesis 6, our empirical results indicate that there is a positive significantly correlation between perceived usefulness and satisfaction. This implies that users will be satisfied when they believe that the social media community is beneficial to them. Therefore, social media community operators should understand what kind of services are suitable for their target market, as this can then improve the satisfaction of users.

For Hypothesis 7, our empirical results indicate that there is the positive impact from perceived usefulness to continuance intention. This implies that social media community operators should provide the necessary services to their target market users, as this will encourage users to see the usefulness of these services and continue to use them. It is thus important to understand the demands of users and to enrich the functionality of websites in order to enhance the usefulness of a social media community.

For Hypothesis 8, our empirical results indicate that the degree of confirmation has a positive and significant impact on perceived usefulness, consistent with Bhattacharjee [38]. Bhattacharjee [38] proposed that ECM should take the extent to which a user's expectations are confirmed as cognitive beliefs to address the user's continued usage behavior. Later, scholars attempted to apply this concept

to more fields, and the previous literature confirmed that perceived usefulness is affected by the degree of confirmation [39,44,56]. This also means that a user's expectations of and real experience in the social media community will affect the perceived usefulness of the community. That is, the functions and services of a social media community have to meet the expectations of users if they are to think it is helpful. This can also improve the perceived usefulness of a social media community.

For Hypothesis 9, our empirical results indicate that there is the positive linkage between the degree of confirmation and satisfaction, consistent with Bhattacharjee [38], Lin, Wu and Tsai [42], Roca, Chiu and Martínez [56], and Thong, Hong and Tam [44]. Bhattacharjee [38] proposed that user beliefs and confirmation affect user satisfaction. This means that a user's expectations and real experience in the social media community will impact their satisfaction with it. The degree of confirmation generated by the social media community affects the user's satisfaction with it. If the social media community meets the expectations of its users, it can improve their satisfaction.

For Hypothesis 10, our empirical results indicate that satisfaction has the positive relationship with continuance intention, which is consistent with ECM. In the past, ECM studies have confirmed that satisfaction has a significant impact on usage continuance intention, and users with high satisfaction have a higher intention to continue to use the focal IT [61]. The higher the satisfaction of social media community users, the more positive their usage intention. In addition, a social media community based on interpersonal interactions simulates the intimacy of face-to-face communication, and promotes user interactions with the community through personal identity, links and status. By using content that reflects issues of long-term interest, current affairs or hot topics, the social media community can remain impartial and attractive to users. Social media community operators should aim to meet the users' real-time interactive communication needs, as this will make users happy to share messages with others. Operators can thus achieve sustainable operations in this manner.

6. Conclusions

In recent years, social media communities based on the interactions among users have quickly linked people around the world. Social media community users have the ability to increase the economic value of such websites [62]. The operators of social media communities should manage and maintain the content and processes that enable users to interact with each other to attract more members. This study explored the usage intentions in relation to social media communities based on the concepts of social influence and social identity. Based on the results of this study, we suggested that social media community operators can provide services, strategies, techniques and designs that highlight the social influence and community characteristics of their websites.

We recommend that social media community operators should consider if their system is more useful than other existing social media sites, and whether the feelings of users meet their original expectations. The feelings of users vary, but will sustainably affect usage satisfaction and usage continuance intention. In addition, social media communities should develop towards the network model, focus on relationship management, expand any small regional networks of heterogeneous members, increase the links between members, and thus stabilize the composition of members and enhance the user base. Such sites should also provide updated personal information, encourage members to interact, establish member files and other functions. Regardless of the type of social media community, the related functions and membership are inevitably diverse and complicated. Eventually, a social media community is likely to have the dual characteristics of information exchange and social mutual assistance.

This study is rigorous on the research procedure, but we still need to mention several research limitations for this article. First, this study is based on a small sample size of social media users in Taiwan, but each country or region has its own cultural differences or preferences. Second, this study applied a cross-sectional measure that adopted a single time point for sample collection. Therefore, our theoretical model could barely explain the factors that are used continually by social media community users at a specific time period and potentially could not observe the behaviors of users over

time. We recommend that further scholars execute the time-series observations of the homogeneous sample to deeply evaluate the transition from initial usage to sustainable social influence and social identity. Third, this study explores the personal and environment-related effects from the view of social influence, but does not discuss the relationship between online service providers and users. Future studies could thus work to verify the different characteristics of users with more different views on the individual characteristics or with business views from service providers. Finally, this study focused on the social media community users' characteristics and the environment but did not discuss any social media community systems. We suggest that further works could also estimate the influence of the social media community system in the future and thus research a deeply thoroughgoing understanding of the usage continuance intention in a social media community.

Author Contributions: Conceptualization, A.R., S.-L.H. and Y.J.W.; methodology, S.-C.C. and J.-Y.C.; validation, S.-L.H.; formal analysis, J.-Y.C.; resources, S.-L.H.; writing—original draft preparation, A.R., S.-L.H. and S.-C.C. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

References

1. Ballew, M.T.; Omoto, A.M.; Winter, P.L. Using web 2.0 and social media technologies to foster proenvironmental action. *Sustainability* **2015**, *7*, 10620–10648. [\[CrossRef\]](#)
2. Chen, S.C.; Yen, D.C.; Hwang, M.I. Factors influencing the continuance intention to the usage of web 2.0: An empirical study. *Comput. Hum. Behav.* **2012**, *28*, 933–941. [\[CrossRef\]](#)
3. Mariani, M. Web 2.0 and destination marketing: Current trends and future directions. *Sustainability* **2020**, *12*, 3771. [\[CrossRef\]](#)
4. Wu, C.H.; Chen, S.C. Understanding the relationships of critical factors to facebook educational usage intention. *Internet Res.* **2015**, *25*, 262–278. [\[CrossRef\]](#)
5. Yuan, C.-H.; Wu, Y.J. Mobile instant messaging or face-to-face? Group interactions in cooperative simulations. *Comput. Hum. Behav.* **2020**, *113*, 106508. [\[CrossRef\]](#)
6. Hsu, C.L.; Lin, J.C.C. What drives purchase intention for paid mobile apps?-an expectation confirmation model with perceived value. *Elect. Commer. Res. Appl.* **2015**, *14*, 46–57. [\[CrossRef\]](#)
7. Hussain, T.; Li, B.; Wang, D. What factors influence the sustainable tour process in social media usage? Examining a rural mountain region in pakistan. *Sustainability* **2018**, *10*, 2220. [\[CrossRef\]](#)
8. Moore, G.C.; Benbasat, I. Development of an instrument to measure the perceptions of adopting an information technology innovation. *Inf. Syst. Res.* **1991**, *2*, 192–222. [\[CrossRef\]](#)
9. Blanchard, A.L. Developing a sense of virtual community measure. *CyberPsychol. Behav.* **2007**, *10*, 827–830. [\[CrossRef\]](#)
10. Blanchard, A.L.; Markus, L. The experienced “sense” of a virtual community: Characteristics and processes. *Data Base Adv. Inf. Syst.* **2004**, *35*, 64–79. [\[CrossRef\]](#)
11. Obst, P.; Zinkiewicz, L.; Smith, S.G. Sense of community in science fiction fandom, part 2: Comparing neighborhood and interest group sense of community. *J. Community Psychol.* **2002**, *30*, 105–117. [\[CrossRef\]](#)
12. Dholakia, U.M.; Bagozzi, R.P.; Pearo, L.K. A social influence model of consumer participation in network- and small-group-based virtual communities. *Int. J. Res. Mark.* **2004**, *21*, 241–263. [\[CrossRef\]](#)
13. Shen, A.X.L.; Cheung, C.M.K.; Lee, M.K.O.; Chen, H. How social influence affects we-intention to use instant messaging: The moderating effect of usage experience. *Inf. Syst. Front.* **2011**, *13*, 157–169. [\[CrossRef\]](#)
14. Fishbein, M.; Ajzen, I. *Predicting and Changing Behavior: The Reasoned Action Approach*; Taylor & Francis: New York, NY, USA, 2011.
15. Lou, H.; Luo, W.; Strong, D. Perceived critical mass effect on groupware acceptance. *Eur. J. Inform. Syst.* **2000**, *9*, 91–103. [\[CrossRef\]](#)
16. Tajfel, H.; Turner, J.C. The Social Identity Theory of Intergroup Behaviour. In *Psychology of Intergroup Relations*; Nelson-Hall: Chicago, IL, USA, 1986; pp. 7–24.

17. Blanchard, A.L. Testing a model of sense of virtual community. *Comput. Hum. Behav.* **2008**, *24*, 2107–2123. [CrossRef]
18. Chen, S.C.; Wu, C.H.; Wu, Y.C.; Chen, J. Understanding users' continuance intention of Facebook fan pages: The social capital perspective. *Sun Yat-Sen Manag. Rev.* **2014**, *22*. [CrossRef]
19. Holmes, K.M.; O'Loughlin, N. The experiences of people with learning disabilities on social networking sites. *Brit. J. Learn. Disabil.* **2014**, *42*, 1–5. [CrossRef]
20. Obst, P.L.; White, K.M. Revisiting the sense of community index: A confirmatory factor analysis. *J. Community Psychol.* **2004**, *32*, 691–705. [CrossRef]
21. van Zomeren, M.; Postmes, T.; Spears, R. Toward an integrative social identity model of collective action: A quantitative research synthesis of three socio-psychological perspectives. *Psychol. Bull.* **2008**, *134*, 504–535. [CrossRef]
22. Fishbein, M.; Ajzen, I. Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. 1977. Available online: https://www.researchgate.net/publication/233897090_Belief_attitude_intention_and_behaviour_An_introduction_to_theory_and_research (accessed on 28 August 2020).
23. Postmes, T.; Spears, R.; Lea, M. The formation of group norms in computer-mediated communication. *Hum. Commun. Res.* **2000**, *26*, 341–371. [CrossRef]
24. Algesheimer, R.; Dholakia, U.M.; Herrmann, A. The social influence of brand community: Evidence from european car clubs. *J. Mark.* **2005**, *69*, 19–34. [CrossRef]
25. Carlson, B.D.; Suter, T.A.; Brown, T.J. Social versus psychological brand community: The role of psychological sense of brand community. *J. Bus. Res.* **2008**, *61*, 284–291. [CrossRef]
26. Chou, C.H.; Wang, Y.S.; Tang, T.I. Exploring the determinants of knowledge adoption in virtual communities: A social influence perspective. *Int. J. Inf. Manag.* **2015**, *35*, 364–376. [CrossRef]
27. Tsai, H.T.; Bagozzi, R.P. Contribution behavior in virtual communities: Cognitive, emotional, and social influences. *MIS Q.* **2014**, *38*, 143–163. [CrossRef]
28. Cialdini, R.B.; Goldstein, N.J. Social influence: Compliance and conformity. *Annu. Rev. Psychol.* **2004**, *55*, 591–621. [CrossRef]
29. Boulding, K.E. General systems theory-the skeleton of science. *Mark. Sci.* **1956**, *2*, 197–208. [CrossRef]
30. Kim, C.; Lee, S.G.; Kang, M. I became an attractive person in the virtual world: Users' identification with virtual communities and avatars. *Comput. Hum. Behav.* **2012**, *28*, 1663–1669. [CrossRef]
31. Venkatesh, V.; Morris, M.G.; Davis, G.B.; Davis, F.D. User acceptance of information technology: Toward a unified view. *MIS Q.* **2003**, *27*, 425–478. [CrossRef]
32. Metcalfe, B. Metcalfe's law: A network becomes more valuable as it reaches more users. *Infoworld* **1995**, *17*, 53–54.
33. Rogers, E.M. *Diffusion of Innovations*, 4th ed.; Simon and Schuster: New York, NY, USA, 2010.
34. Kim, M.S.; Kim, H. Is there early take-off phenomenon in diffusion of ip-based telecommunications services? *Omega* **2007**, *35*, 727–739. [CrossRef]
35. Hsiao, K.L.; Lin, J.C.C.; Wang, X.Y.; Lu, H.P.; Yu, H. Antecedents and consequences of trust in online product recommendations an empirical study in social shopping. *Online Inf. Rev.* **2010**, *34*, 935–953. [CrossRef]
36. Hsu, C.-L.; Lu, H.-P. Why do people play on-line games? An extended tam with social influences and flow experience. *Inf. Manag.* **2004**, *41*, 853–868. [CrossRef]
37. Oliver, R.L. A cognitive model of the antecedents and consequences of satisfaction decisions. *J. Mark. Res.* **1980**, *17*, 460–469. [CrossRef]
38. Bhattacharjee, A. Understanding information systems continuance: An expectation-confirmation model. *MIS Q.* **2001**, *25*, 351–370. [CrossRef]
39. Chen, S.C.; Liu, M.L.; Lin, C.P. Integrating technology readiness into the expectation-confirmation model: An empirical study of mobile services. *Cyberpsychol. Behav. Soc. Networking* **2013**, *16*, 604–612. [CrossRef]
40. Kim, S.H.; Bae, J.H.; Jeon, H.M. Continuous intention on accommodation apps: Integrated value-based adoption and expectation-confirmation model analysis. *Sustainability* **2019**, *11*, 1578. [CrossRef]
41. Lee, M.C. Explaining and predicting users' continuance intention toward e-learning: An extension of the expectation-confirmation model. *Comput. Educ.* **2010**, *54*, 506–516. [CrossRef]
42. Lin, C.S.; Wu, S.; Tsai, R.J. Integrating perceived playfulness into expectation-confirmation model for web portal context. *Inf. Manag.* **2005**, *42*, 683–693. [CrossRef]

43. Oghuma, A.P.; Libaque-Saenz, C.F.; Wong, S.F.; Chang, Y. An expectation-confirmation model of continuance intention to use mobile instant messaging. *Telematics Inf.* **2016**, *33*, 34–47. [\[CrossRef\]](#)
44. Thong, J.Y.L.; Hong, S.J.; Tam, K.Y. The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance. *Int. J. Hum. Comput. Stud.* **2006**, *64*, 799–810. [\[CrossRef\]](#)
45. Bagozzi, R.P.; Dholakia, U.M. Intentional social action in virtual communities. *J. Interact. Mark.* **2002**, *16*, 2–21. [\[CrossRef\]](#)
46. Oliver, R.L. Cognitive, affective, and attribute bases of the satisfaction response. *J. Consum. Res.* **1993**, *20*, 418–430. [\[CrossRef\]](#)
47. Ruebeck, C.; Stafford, S.; Tynan, N.; Alpert, W.; Ball, G.; Butkevich, B. Network externalities and standardization: A classroom demonstration. *South. Econ. J.* **2003**, *69*, 1000–1008. [\[CrossRef\]](#)
48. Jing, B. Versioning information goods with network externalities. In Proceedings of the Twenty First International Conference on Information Systems, Brisbane, Queensland, Australia, 10–13 December 2000; p. 1.
49. Chipuer, H.M.; Pretty, G.M.H. A review of the sense of community index: Current uses, factor structure, reliability, and further development. *J. Community Psychol.* **1999**, *27*, 643–658. [\[CrossRef\]](#)
50. Fisher, A.T.; Sonn, C.C.; Bishop, B.J. *Psychological Sense of Community: Research, Applications, and Implications*; Kluwer: New York, NY, USA, 2002.
51. McMillan, D.W.; Chavis, D.M. Sense of community: A definition and theory. *J. Community Psychol.* **1986**, *14*, 6–23. [\[CrossRef\]](#)
52. Song, J.; Kim, Y.J. Social influence process in the acceptance of a virtual community service. *Inf. Syst. Front.* **2006**, *8*, 241–252. [\[CrossRef\]](#)
53. Kwon, O.; Wen, Y. An empirical study of the factors affecting social network service use. *Comput. Hum. Behav.* **2010**, *26*, 254–263. [\[CrossRef\]](#)
54. Davis, F.D. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Q.* **1989**, *13*, 319–339. [\[CrossRef\]](#)
55. Bhattacharjee, A.; Perols, J.; Sanford, C. Information technology continuance: A theoretic extension and empirical test. *J. Comput. Inf. Syst.* **2008**, *49*, 17–26. [\[CrossRef\]](#)
56. Roca, J.C.; Chiu, C.M.; Martínez, F.J. Understanding e-learning continuance intention: An extension of the technology acceptance model. *Int. J. Hum. Comput. Stud.* **2006**, *64*, 683–696. [\[CrossRef\]](#)
57. Premkumar, G.; Bhattacharjee, A. Explaining information technology usage: A test of competing models. *Omega* **2008**, *36*, 64–75. [\[CrossRef\]](#)
58. Lin, J.S.C.; Hsieh, P.L. The influence of technology readiness on satisfaction and behavioral intentions toward self-service technologies. *Comput. Hum. Behav.* **2007**, *23*, 1597–1615. [\[CrossRef\]](#)
59. Taiwan Network Information Center. TwNIC Taiwan Internet Report. 2019. Available online: https://report.twnic.tw/2019/index_en.html (accessed on 28 August 2020).
60. Torkzadeh, G.; Koufteros, X.; Pflughoeft, K. Confirmatory analysis of computer self-efficacy. *Struct. Equ. Modeling* **2003**, *10*, 263–275. [\[CrossRef\]](#)
61. Chiu, C.M.; Sun, S.Y.; Sun, P.C.; Ju, T.L. An empirical analysis of the antecedents of web-based learning continuance. *Comput. Hum. Behav.* **2007**, *49*, 1224–1245. [\[CrossRef\]](#)
62. Kucuk, S.U.; Krishnamurthy, S. An analysis of consumer power on the internet. *Technovation* **2007**, *27*, 47–56. [\[CrossRef\]](#)

