

# Building Member Attachment in Social Media: Applying Theories of Social Cognitive and Cognitive Absorption

Chih-Hsien Lee and Meng-Hsiang Hsu

**Abstract**—In recent years, social media rises abruptly and becomes part of many people's daily life. And many cases have been heard that people help others in social media. However, there is little theoretically based research on what makes members achieve their goals in social media. This study applies Social Cognitive Theory and Cognitive Absorption Theory to understand how social media develop member attachment. Data collected from 255 members of Facebook in Taiwan, who filling out the questionnaires completely. Researcher evaluated Structural Equation Model and tested if the empirical data confirm to the propose model by using SmartPLS2.0. Finally, this study found the following consequences: (1) Social interaction and Social awareness have a positive effect to Cognitive Absorption. (2) Cognitive Absorption has a positive effect to community and membership attachment. (3) Personal outcome expectations have a positive effect to community attachment. (4) Community-related outcome expectations have a positive effect to community and membership attachment. (5) Community attachment has a positive effect to help communities and members. (6) Community Membership Attachment has a positive effect to help communities and members. The implications for theory and practice are discussed.

**Index Terms**—Attachment, social cognitive theory, cognitive absorption theory, social interaction, social awareness.

## I. INTRODUCTION

In recent years, more and more online social network sites (SNS) have been integrated into people's daily lives and have become an important communication platform [1-2]. According to a comScore report in 2011, the average Facebook user spent a total of 423 minutes per month on Facebook. Social network sites such as Facebook, Line, and Twitter provide a personal display platform where users can easily share photos, videos, blog posts, e-mail and instant messages, social media to create new ways of communicating with others, and create or maintain relationships with others. Social media focuses on building and reflecting social networks or interpersonal social relationships, such as benefit sharing or activity, gathering people with common or similar interests, backgrounds, or conducting their own social circle activities. In the past few years, social media has developed the potential to build social relationships on the web, and Facebook, as a typical example of social media, is where people connect and promote friendships and social relationships [3].

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However, people are involved in using social media to interact, communicate and connect with each other through social media. Not all people are willing to pay for social media users, so it's important to understand what people are doing on social media. Participation in social media and willingness to help the community and help members of the social community are important issues today.

Because of the rapid development and popularization of social media, Facebook has been particularly valued by scholars in the literature published in the past about social media [4], [5]. He argues that Facebook is opening a new revolution in interpersonal interaction. The main focus of social media is the emphasis on user interaction and participation, and users are a key success factor [2]. Online communities are the common or complementary interests that people gather together, and their primary means of communication is through the Web [6]. Online communities also provide useful information to the general public [7], emotional support [8], discussion of political and social sites [9], and ways to maintain their social networks and meet new people [10].

Social media provides a social-based platform [11]. Although there are considerable references in Information Systems (IS) that point to the social importance of the virtual world [12], social facets development is still incomplete, concepts like co-presence [13], social interactions [14], social presence [15], and social awareness [16] have been proposed as an important concept in the virtual world. So far, there is a lack of coherent interpretation of the social media characteristics in the IS domain, such as social and social dimensions that may influence people's desire to use technology in the future [17].

This study uses social cognitive theory as the foundation of the research framework, which further influences behavioral outcomes through the influence of social media environment on individual factors, including cognitive absorption, expected outcomes, dependency relationships, willingness to help the community and the members of the community. This study uses social media to help communities and members of the community willing to help as the main research topic, the purpose of this study is as follows:

- 1) To explore whether the environmental factors formed by social interaction and social awareness will affect the user's cognitive absorption.
- 2) To explore whether cognitive absorption will affect the dependency relationship of community members and the dependence of community members.
- 3) To explore whether the expected results will affect the dependence on social media, and further influence willing to help people.
- 4) The cognitive absorption as a social cognitive theory of individual factors, combined to explore the social media environment, affecting individual factors and behavioral

outcomes.

II. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

In the past, online community literature has pointed out that the continuous participation and stay of members depends on the dependency of the members, and their dependency is cultivated by linking the members' interests and their like-minded people [6]. Through dependencies, we talk about the emotional connections of online community members and their interest in online communities, and they are strongly involved in the online community where they are members [18]. Social Cognition Theory has been widely used and validated in the literature on information systems [19]-20]. This theory defines human behavior as a trinity, including dynamic, individual factors of reciprocal interaction behavior, and social networks. Among all the factors influencing human function, self-efficacy and expected results are the core of this theory. Self-efficacy refers to the ability of people to judge the organization and performance, and the expected outcome is the result of people's judgment of expected behavior [20]. Many recent studies have used social cognitive theory to detect the relationship between individual cognition, such as self-efficacy and expected outcomes using computer and internet behavior [21]. Many studies focus on and emphasize user behavior on IT and have become an instrumental concept. Individual psychology determines that individuals' behavior toward new information technology (IT) is shaped by their full experience in technology [22].

In this study, social interaction (SI) and social awareness (SA) were used as contexts for using social media based on past literature. The internal factors of using social media include expectation result, attachment dependency relation and self-efficacy. The expected result is divided into two kinds: individual expectation result and community related expectation result, and attachment dependency relation divides into two kinds: community dependency relation and community member attachment relation. This study focus the concentration and time extraction from cognitive absorption theory, and willing to help the community and willing to help members of the community from social media.

This study examines the impact of the social media environment (social interaction, social awareness) on the social media user's internal factors (expected outcomes, dependencies, self-efficacy), social media usage behavior (willingness to help the community, willingness to help Community members), and explore the relationship between them, the following will explore the research model of the facets and assumptions. The research model is shown in Fig. 1:

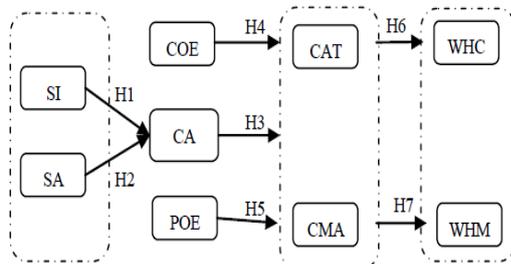


Fig. 1. Research model.

III. METHODS

A. Variable Operational Definition and Questionnaire Design

This study has nine main aspects: social interaction (SI), social awareness (SA), cognitive absorption (CA), personal outcome expected (POE), community-related outcome expected (COE), community attachment (CAT), community member attachment (CMA), willing to help the community (WHC), willing to help members of the community (WHM). The research used a five point Likert-scale from 1, strongly disagree to 5, strongly agree, having a total of 37 questions and the definition of operational variables are as shown in Table I:

TABLE I: OPERATIONAL VARIABLES DEFINITION

Code	definition	reference
SI	Through the social media platform provides interactive features, individuals can easily communicate with others the extent of the efficient discovery or browsing information, easily integrated into the environment, and on behalf of individuals in the environment with the strength of the relationship between others	[23]
SA	Social awareness refers to the ability of an individual to perceive the interaction of others with others in the same context, and to receive the perception of others in the environment	[11]
CA	Cognitive absorption refers to the process of absorbing information from social interaction and turning information into social cognition when individuals use social media to carry out activities, so that the individual spirit can fully participate in a state experience in the activity	[11] · [24]
POE	An individual's expected outcome is how an individual expects to help the community or help members of the community influence the individual	[25]
COE	Community-related expected outcome refer to individuals' expectations of helping the community or helping members of the community influence the online community	[25]
CAT	Community Attachment refers to the cognitive process of social similarity, attraction and empathy through the use of social media, the recognition and care of the community, the perception and the nature of the community Or the purpose of linking together	[26-27]
CMA	Community Member Attachment refers to the cognitive process of social similarity, attraction and empathy through the use of social media, the recognition and care of the members of the community, and interpersonal Relational links	[26-27, 18]
WHC	People use social media to help online communities	[18]
WHM	People use social media to help online community members	[18]

B. Sample and Data Collection

In this study, a questionnaire survey was conducted to collect sample data from social media "Facebook" users. The questionnaire used in this study was built on Google Docs platform, and the questionnaire information was published on the Facebook page of the individual, and sent to the questionnaire and master of the famous BBS website. Facebook experience users to fill out the questionnaire to the specified site. All the questionnaires by Facebook experience users to fill in their own answers, a total of 260 questionnaires

were collected, after deducting the duplicate and invalid questionnaires; finally get a total of 255, the effective rate of 98%. In this study, the sample data collected were analyzed by SmartPLS. Among the valid questionnaires, 131 were women, accounting for 51.4%, 124 were male, accounting for 48.6%. The main age distribution was from 19 to 25, Accounting for 53.3%, followed by 26 to 35 years old, accounting for 27.1%; education to universities, accounting for 54.9% for the majority, followed by master, accounting for 39.2% of the respondents, the daily use of Facebook users 60.8% for the majority, the use of qualifications to three years, the most, accounting for 40.4%. In addition, the top three most frequently used or engaged categories on Facebook are: friends, 31.5%, entertainment, 17.0%, family, 15.3%.

IV. ANALYSIS AND RESULTS

The hypothesis of this study was validated using Smart-PLS2.0 structural equation model for pattern validation and repeated sampling to 500 copies by Bootstrap Resampling Method [28-29].

In Table II: presents the summary of results for each study hypothesis. The results indicate that all of the hypotheses are supported.

TABLE II: SUMMARY OF HYPOTHESIS RESULTS

H	Description	Results
H1	Social Interaction is positively (SI) related to Cognitive Absorption (CA)	supported
H2	Social Awareness (SA) is positively related to Cognitive Absorption (CA)	supported
H3a	Cognitive Absorption (CA) is positively related to Community Attachment (CAT)	supported
H3b	Cognitive Absorption (CA) is positively related to Community Membership Attachment (CMA)	supported
H4a	Community Outcome Expectations (COE) is positively related to Community Attachment (CAT)	supported
H4b	Community Outcome Expectations (COE) is positively related to Community Membership Attachment (CMA)	supported
H5a	Personal Outcome Expectations (POE) is positively related to Community Attachment (CAT)	supported
H5b	Personal Outcome Expectations (POE) is positively related to Community Membership Attachment (CMA)	supported
H6a	Community Attachment (CAT) is positively related to Willing to Help Community (WHC)	supported
H6b	Community Attachment (CAT) is positively related to Willing to Help Members (WHM)	supported
H7a	Community Membership Attachment (CMA) is positively related to Willing to Help Community (WHC)	supported
H7b	Community Membership Attachment (CMA) is positively related to Willing to Help Members (WHM)	supported

In Fig. 2 presents the path analysis chart for each study hypothesis. The results indicate that all of the hypotheses are supported.

Ref. [30] Suggested that  $R^2$  is greater than 10%, it has an independent explanatory power, and the study of other facets of the structure of the explanatory power between 35% and 66%, so the model of this study has a considerable degree of explanatory power.

In Table III, presents the factor loading and reliabilities. The results indicate that all of the constructs have a considerable degree of reliabilities.

TABLE III: FACTOR LOADING AND RELIABILITIES

Construct	Item	Loading	CR	AVE	Cronbach
SI	SI1	0.78	0.84	0.63	0.71
	SI2	0.84			
	SI3	0.76			
SA	SA1	0.87	0.94	0.79	0.91
	SA2	0.89			
	SA3	0.89			
	SA4	0.90			
CA	CA1	0.78	0.92	0.70	0.89
	CA2	0.84			
	CA3	0.88			
	CA4	0.86			
	CA5	0.83			
POE	POE1	0.80	0.93	0.69	0.91
	POE2	0.81			
	POE3	0.86			
	POE4	0.87			
	POE5	0.78			
	POE6	0.87			
COE	COE1	0.84	0.94	0.75	0.92
	COE2	0.90			
	COE3	0.87			
	COE4	0.88			
	COE5	0.84			
CAT	CAT1	0.83	0.91	0.73	0.88
	CAT2	0.89			
	CAT3	0.87			
	CAT4	0.83			
CMA	CMA1	0.86	0.91	0.73	0.88
	CMA2	0.85			
	CMA3	0.88			
	CMA4	0.82			
WHC	WHC1	0.92	0.93	0.81	0.89
	WHC2	0.91			
	WHC3	0.87			
WHM	WHM1	0.93	0.93	0.82	0.89
	WHM2	0.92			
	WHM3	0.88			

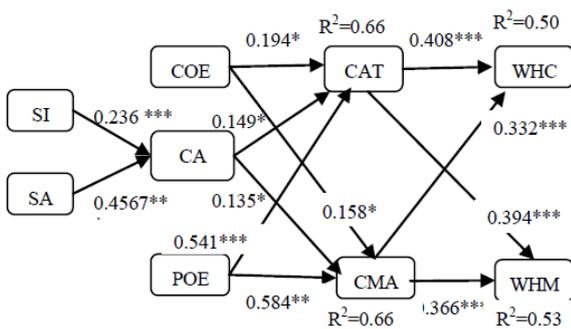


Fig. 2. Path analysis.

In Table IV, presents the PLS analysis results, the results indicate that all of the hypotheses are supported.

TABLE IV: PLS ANALYSIS RESULTS

Hypothesis	Constructs	Path Coefficient	t Value
H1	SI→CA	0.236	4.239***
H2	SA→CA	0.457	7.948***
H3a	CA→CAT	0.149	2.455*
H3b	CA→CMA	0.135	2.352*
H4a	COE→CAT	0.194	2.471*

H4b	COE→CMA	0.158	2.466*
H5a	POE→CAT	0.541	6.973***
H5b	POE→CMA	0.584	8.346***
H6a	CAT→WHC	0.408	5.161***
H6b	CAT→WHM	0.394	4.562***
H7a	CMA→WHC	0.332	3.842***
H7b	CMA→WHM	0.366	4.157***

Note : \* $p < 0.05$  ; \*\* $p < 0.01$  ; \*\*\* $p < 0.001$

In Table V, presents the correlation matrix. The figures in shaded diagonal are values of square root of the AVE (Average Variation Extraction), and have the bigger value. For example: CMA-CMA with **0.85** is bigger than CMA-CA: 0.6, CMA-COE: 0.71, CMA-CAT: 0.84, CMA-POE: 0.80, CMA-SA: 0.64, CMA-SI: 0.45, CMA-WHC: 0.68, and CMA-WHM: 0.70, so the model of this study has a considerable degree of discriminant validity.

TABLE V: CORRELATION MATRIX

	CMA	CA	COE	CAT	POE	SA	SI	WHC	WHM
CMA	<b>0.85</b>								
CA	0.60	<b>0.84</b>							
COE	0.71	0.59	<b>0.87</b>						
CAT	0.84	0.61	0.72	<b>0.85</b>					
POE	0.80	0.64	0.81	0.79	<b>0.83</b>				
SA	0.64	0.55	0.68	0.65	0.74	<b>0.89</b>			
SI	0.45	0.42	0.55	0.47	0.55	0.40	<b>0.79</b>		
WHC	0.68	0.52	0.64	0.69	0.69	0.61	0.38	<b>0.90</b>	
WHM	0.70	0.47	0.64	0.70	0.68	0.60	0.39	0.88	<b>0.91</b>

Note: Figures in shaded diagonal are values of square root of the AVE

## V. CONCLUSION AND LIMITATIONS

In this study, the research model and research hypotheses are deduced from the literature, and the actual participation of Facebook users as a questionnaire survey of empirical research, through empirical analysis, this chapter will further explore and explain the results, theoretical implications, practical implications and the limitations of the research.

### A. Theoretical Implications

Based on the theory of social cognition proposed by [20] and [31], this paper puts forward the argument of building dependency relation of online membership on the basis of [18], which is applied to constructing social media members of the dependency relationship to explore the social media environment, the impact of individual behavior of the decisive factors. Social cognitive theory has been widely used and validated in many contexts of human behavior, but has not yet been applied in the context of social media with cognitive absorption theory.

In this study, [11] proposed that social awareness in the virtual world be used as an influencing state of immersion in the context of social media. According to the results of this study, social interaction and social awareness can have a positive impact on cognitive absorption. Social media members generate experience in using social media in the process of social interaction, and absorb information from interaction, and then transform information into the process of member cognition, so that the spirit of membership is fully involved in the process of state experience.

This study successfully constructs the dependency relationship of social media members according to [18]'s argument that the online community constructs the

dependency relation of members. The results of this study show that there are two different mechanisms for membership in social media, one for social media members focused on the community and its activities, and the other is social media members focused on the community members and between them Activities. Therefore, this study provides new insights into the study of the attachment of social media members.

In the context of social media, cognitive attraction also significantly affects the dependency of members on the community and the dependency of members of the community, and members of the individual expected results and community-related expected results were significantly affected community dependencies and community Membership dependencies, through the attachment to the community or community members, and then significantly affect members in the social media help behavior.

### B. Practical Implications

With the rapid development of social media, social media has become a part of daily life of many users. The results of this study have some impact on the people who run social media, design and development. Social media managers can help social media grow by strengthening the capabilities and features of social media, as well as competing in the same nature of social media. Social media members provide more detailed information about the community, through long and repeated visits to the community, and from time to time by community managers to update community-related information to make members more dependent on the community and The members of the spirit are focused on social media, to improve the frequency of use of social media to increase the membership for the degree of social media attachment.

Social media members are also able to engage and interact with members of the community through frequent use, so that members are dependent on the members of the community and the spirit of the members are focused on interaction with others in the process, but also improve the social media The frequency of use increases the degree to which members are attached to social media members. In addition, social media provides a communication channel through which social and media members seek help from others through social media membership, so the results of this study will help practitioners understand the impact of social media on their members, But also to provide practice in the social media management practices as a reference.

### C. Limitations and Future Research

This study is limited to users on Facebook, and does not fully summarize other social networking sites, such as Google +, Twitter and Line, and the community websites have their own characteristics, the composition of community functions is slightly different, So future research can be for different types of social media for in-depth discussion and comparison.

This study is limited to Facebook users in Taiwan, and the user due to national conditions and cultural backgrounds may have different degrees of social media attachment, and have different social media use behavioral results, so the future research can be The study will be extended to other countries to compare differences in cultural differences between different countries for social media members of the attachment, to better understand the different social media members of social differences in the use of social media needs

and future social media-related development direction.

In the model analysis of the present study, the dimensions of cognitive absorption were measured using only two dimensions, temporal dissociation (the inability to register the passage of time while engaged in interaction) and focused immersion, without the addition of three other dimensions of perception (heightened enjoyment, control, curiosity) to be explored and measured. In the future study, may be cognitive absorption of the five facets, each analysis of the structure itself to study the impact of the model, you can also identify the level of the impact of various facets on the model, to make this study more complete.

In the present study, social cognition theory and cognitive absorption theory are used to construct the attachment relationship of social media members. In future research, the concept of dependency relationship may be applied to other outcomes such as linkages [32-33], or on other topics, such as the use of smart phones, to explore the impact of differences in the degree of dependency on IT systems among IT users.

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