

Incorporating Flow Theory to Technology Acceptance Model for Online Community Formation

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Abstract - Online communities in social networking sites exist and thrive in the environment provided by them. The study of online communities becomes important for marketers, academicians and business practitioners because of the huge rise in the user base of these social networking sites in recent years. In this study, we adopt the approach to focus on the user's perceptions about online communities and establish various relationships among them leading to predict the intention to use such online communities. Technology Acceptance Model and flow theory are used to identify the user beliefs affecting the intention to use online communities. We also study the effect of online trust in form of system trust and interpersonal trust on the intention to use online community. We further incorporate the knowledge of user beliefs to establish the benefits in form of online social capital resulting from use of such online communities.

Keywords-online social network; online communities; TAM; social capital

I. INTRODUCTION

Social networking on the Internet is becoming important not only for individuals but also for organizations. It has penetrated every phase of people's lives from making new friends, to maintaining existing relationships, job search or brand building exercise for organizations. The online social networks (OSNs) provide a shared communication environment with inbuilt features which facilitates the formation of online communities (OC). The study of online communities in social networks thus becomes an integral part of social network researchers.

In today's digital era, information and communication technologies (ICTs) act as a major player or catalyst in the processes of community formation. The communities formed online vary vastly from one another either based on age, culture, economic benefits, interest, language, and other dimensions that would hinder, if not prohibit, communication in the physical world. There could be various reasons for a user to join and remain in a particular online community. These community formations give rise to fundamental questions like, why do people join a community? What factors motivate an online user to share his views and ideas on social networking sites? Do the features like trust and security stops someone from joining a particular online community? How do these variables change over time as the members of a community become more informed about each other?

These issues have been dealt in various studies in different forms like dealing with identity of user in online social networks [1], defining the communities [2], the

relative strength of relationship ties among community members, the trust between the community members [3] etc. In this study, we try to address the fundamental aspect of understanding the reasons behind joining an online community.

The objective of our study is twofold in nature. The first objective is to use theories such as Technology Acceptance Model (TAM) [4, 5] and flow theory [6] to identify the factors which can be important determinants for joining an online community. The second objective of our study is to identify the benefits derived by an individual from the online community formation process. We use social capital theory in the form it is applied for online information systems.

In order to accomplish our study, we formulate our research questions as given below:

RQ1: Why do people join online communities? What are the underlying reasons for an individual to join an online community?

RQ2: What are the benefits associated with people joining online communities in context of social networking sites?

The paper is organized as follows. In Section II we present the theoretical background study. In Section III, we present the methodology followed by discussion in Section IV. Finally, we conclude in Section V with the future scope of the study.

II. THEORETICAL BACKGROUND

The objective of this research is to understand the underlying factors which can influence the user to join a particular community, thereby facilitating the community formation process in an online social network. To investigate these factors we start with technology adoption studies and thus use the most widely used Technology Acceptance Model (TAM) [4, 5].

The approach of using theories such as TAM to answer our research question listed in section I, provides us with the user perspective for online community formation process. As suggested by Legris et al. [4] TAM seldom explains the whole picture for technology acceptance problems. So along with TAM we also use factors from flow theory [6], social capital [7] and trust [8] to investigate our research questions more holistically. We build our research model based on the factors from these proven theoretical backgrounds.

A. Intention to use an online community

Technology adoption studies' usual focus is to investigate the intention to use a particular information system and thereby facilitate and translate that intention into

actual use of the information system. This factor becomes the consequence in our research model. It is very important for organizations to know it because it would provide them a way to harness these online communities to reach their organizational goals. Also for marketers it is essential to know the factors impacting the use of an online community.

B. Bonding and Bridging Social Capital

To investigate the benefits associated with joining an online community we use the social capital theory. Social capital broadly refers to the resources accumulated through the relationships among people [10] which provide us two benefits in online social networking sites context. These two benefits are bonding social capital and bridging social capital associated with the type of relationships from which they are derived from online social networks.

C. Perceived ease of use and Perceived usefulness

According to TAM, the attitude towards a technology affects its use. The two belief variables used in TAM which explains the impact on attitude and in turn determine the intention to use, are Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) [23]. As TAM has been applied to online websites or computers at workplace, the following hypotheses follows

Hypothesis 1a: Perceived ease of use will positively affect intention to use an online community.

Hypothesis 1b: Perceived usefulness will positively affect intention to use an online community.

Davis et al. [12] suggest that perceived ease of use affects perceived usefulness and thereby affects the intention to use an information system. Thus follows the hypothesis

Hypothesis 1c: Perceived ease of use will positively affect perceived usefulness of an online community.

As people find merit in perceived ease of use and perceived usefulness of an online community, the more likely they are to use that community and thereby make new ties with other users. The weaker ties contribute to the bridging social capital and stronger ties to the bonding social capital. Thus, we hypothesize

Hypothesis 1d: Perceived ease of use will positively affect bonding social capital.

Hypothesis 1e: Perceived ease of use will positively affect bridging social capital.

Hypothesis 1f: Perceived usefulness will positively affect bonding social capital.

Hypothesis 1g: Perceived usefulness will positively affect bridging social capital.

D. Perceived enjoyment

Past studies have verified that the use of computer technology was influenced by perceived enjoyment (PE) [13]. The concept of perceived enjoyment is borrowed from flow theory [6] where *flow* is defined as “the holistic sensation that people feel when they act with total involvement”. A common measure of flow is the level of intrinsic enjoyment of an activity. An online community interaction is a volitional activity where a factor such as

enjoyment is likely to play an extremely important role. Thus, we hypothesize

Hypothesis 2a: Perceived enjoyment will positively affect intention to use an online community.

Intrinsic motivation drives a user for joining an online community voluntarily. Therefore, the more a user of a social networking site enjoys the activities within an online community, the more likely he/she will form new ties and thus contribute to social capital. Again the weaker ties contribute to the bridging social capital and stronger ties to the bonding social capital. So the perceived enjoyment resulting from such ties can be hypothesized as follows

Hypothesis 2b: Perceived enjoyment will positively affect bridging social capital

Hypothesis 2c: Perceived enjoyment will positively affect bonding social capital

Venkatesh [14] argues that perceived ease of use is affected by perceived enjoyment. Further Venkatesh [14] found that by manipulating the perceived enjoyment associated with information system not only increased the perceived ease of use of information system but also it became more salient to the intended use of system. Thus, we hypothesize

Hypothesis 2d: Perceived enjoyment will positively affect perceived ease of use of an online community.

E. System trust and Interpersonal trust

Trust is a multidimensional construct whose causes and effects have been studied in various scientific disciplines such as sociology, psychology, and marketing. Trust in online context has been studied by Friedman [8], as a means for enriching social capital, while Ba [3] and Lu et al.[22] studied trust involved with e-commerce transactions etc.

In online community context the trust is derived from the relationships existing among users. This becomes the part of our research model in form of *interpersonal trust*. Interpersonal trust is defined as “an expectancy held by an individual or a group that the word, promise, verbal, or written statement of another individual or group can be relied on” [15]. Another dimension for trust in online community to be considered is the trust of an individual on the overall system. This type of trust is attributed to *system trust* which is defined as perceived integrity, benevolence, and ability of the system operator which in our case is any social networking site.

Benlian and Hess [16] establish trust as an important antecedent for the participation in online communities. The greater trust we have in an online community of a social networking site and its users the more likely we are to join that community and use it. Thus, we hypothesize

Hypothesis 3a: System trust will positively affect intention to use an online community.

Hypothesis 3b: Interpersonal trust will positively affect intention to use an online community.

Since both system trust and interpersonal trust factors into the intended use of an online community, thus they are more likely to form new ties with other users in an online community. Since system trust depends on the individual

perceptions of the institutional environment of a system and the structural assurances it provides, thus it is likely to affect both formation of weak ties and strong ties hence, we hypothesize

Hypothesis 3c: System trust will positively affect bonding social capital

Hypothesis 3d: System trust will positively affect bridging social capital

On the other hand interpersonal trust is a result of interaction among user and is an experience-based trust. Interpersonal trust is contributed to by interaction among users which is more likely to be for the strong ties formed between close friends and family. Thus interpersonal trust would affect the bonding social capital. Thus, we hypothesize as

Hypothesis 3e: Interpersonal trust will positively affect bonding social capital.

F. Social networking site usage, self efficacy and social influence

We now elaborate on the external variables for our research model which are likely to be the antecedents for the user beliefs mentioned earlier.

Eastin and LaRose [17] studied the effect of Internet use on social, informational and entertainment outcomes. More recently Facebook usage has been studied as an antecedent in building of online social capital [9]. We study the usage in our context as social networking site usage (SNS usage) and its effect on the user beliefs to use an online community. Thus in our context of online community interaction we believe that more SNS usage is likely to contribute to greater familiarity with the features of SNS and hence should impact user beliefs to use an online community. Thus, we hypothesize as

Hypothesis 4a: Social networking site usage will positively affect perceived usefulness of an online community.

Hypothesis 4b: Social networking site usage will positively affect perceived ease of use of an online community.

Hypothesis 4c: Social networking site usage will positively affect perceived enjoyment of an online community.

Self-efficacy (SE) in the context of information system adoption studies has been studied extensively [17, 18] as an antecedent [17] to the user beliefs involved in the adoption theories. Self-efficacy is a behavioral concept which was first proposed by Bandura [18] and is defined as the belief “in one’s capabilities to organize and execute the courses of action required to produce given attainments”. Earlier it has been studied in information system literature as computer self-efficacy and Internet self-efficacy [17]. We, in the context of our study of online communities in social networking sites, use it as social networking site self-efficacy (SNS self-efficacy). Again Internet self-efficacy has been studied as an antecedent for the social, informational and entertainment outcomes [17] and is an important determinant

of perceived ease of use of an information system. Liu et al. [19] found that previous online learning experience (an external variable for TAM) is an antecedent for user beliefs such as perceived usefulness and perceived ease of use of TAM. Since SNS self-efficacy relates to the ability and skills that an individual possesses to use a social networking site which can contribute positively to its usefulness, ease of use and enjoyment of an online community. Thus, we hypothesize as

Hypothesis 5a: Social networking site self-efficacy will positively affect perceived usefulness of an online community.

Hypothesis 5b: Social networking site self-efficacy will positively affect perceived ease of use of an online community.

Hypothesis 5c: Social networking site self-efficacy will positively affect perceived enjoyment of an online community.

Other users’ actions and thoughts may sometimes influence the choices involved in our decision making. Thus social influence becomes extremely important in social networking studies. Venkatesh et al. [20] define social influence as ‘the degree to which an individual perceives that important others believe he or she should use the new system’. Social influence, sometimes termed as subjective norm, has been used as a direct determinant of behavioural intention to use an information system [20]. Venkatesh et al. [20] argues that this relation exists when use of information system is mandated and thus the relation’s existence is driven by the compliance factor of social influence. In case of voluntary context, such as use of online communities existing in social networking sites, the social influence exists by virtue of influencing the perceptions about the technology [20]. Thus, we hypothesize

Hypothesis 6a: Social influence will positively affect perceived usefulness of an online community.

Hypothesis 6b: Social influence will positively affect perceived ease of use of an online community.

Hypothesis 6c: Social influence will positively affect perceived enjoyment of an online community.

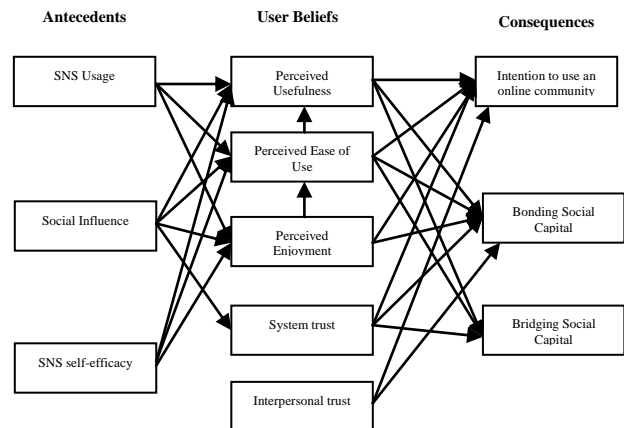


Figure 1. Theoretical research model.

Since social influence in voluntary context can influence the perceptions about an online community, hence it can also contribute in building of trust of users in an online community. Thus, we hypothesize

Hypothesis 6d: Social influence will positively affect system trust of an online community.

The complete theoretical framework is shown in Fig. 1 with the arrows representing the hypothesized relationships between the various constructs.

III. METHODOLOGY

For capturing the user’s perception we built a survey instrument based on measurement scales borrowed from the literature. While the measures are based on previously validated instruments in the literature, the current study re-validates these measures.

Both online and offline modes were used for collecting the responses from the survey respondents. A total of 132 responses were collected after rejecting incomplete and invalid responses. For online mode a survey was created on an online survey hosting site and the link was sent with emails to the respondent explaining the nature of study. Each respondent was asked to fill the survey if they had any prior experience of the Internet and also any online community in any social networking site. Participation in the survey was voluntary so that there are no confounding effects from coercing subjects into participation. They were also asked to mention the online community with which they mostly associate with and were part of. Most of the respondents were users of Facebook owing to its largest reach among social networking users.

Table 1 summarizes the reliability and validity of all the scales used in our research model. The average variance extracted (AVE) for every construct was above 0.5, which means the scales had a good convergent validity [21]. We used composite reliabilities (CRs) to evaluate the internal consistency of the measurement model. As shown in Table I, the CRs were all above 0.7, indicating the scales had good reliabilities. All Chronbach’s alpha values were above the 0.70 threshold, indicating that the scales had high reliabilities. As Intention to use an online community was

measured using single item scale hence the Chronbach’s alpha for it cannot be calculated. Also, since social influence is a two item scale we calculate the Spearman-Brown statistic for it, which is 0.742 indicating a good reliability.

We show the correlation matrix and the square roots of the AVEs in Table II. The square roots of the AVEs are the diagonal elements and they were all larger than their corresponding correlation coefficients with other factors. This suggests that the scales had good discriminant validity.

TABLE I. SUMMARY STATISTICS AND CRONBACH’S ALPHA VALUES FOR ALL SCALES

Scale	Chronbach’s alpha	AVE	CR
Social networking site usage	0.799	0.910	0.805
Social networking site self-efficacy	0.879	0.935	0.882
Perceived Ease of Use	0.919	0.902	0.906
Perceived Usefulness	0.813	0.796	0.812
Perceived Enjoyment	0.827	0.905	0.908
System Trust	0.897	0.682	0.895
Interpersonal Trust	0.843	0.842	0.821
Bonding Social Capital	0.855	0.862	0.780
Bridging Social Capital	0.919	0.899	0.869

To test the hypotheses we conducted linear regression for each of the dependent variables. The results are shown in Table III and Table IV.

Table III shows the three linear regressions with dependent variable as intention to use an online community, bonding social capital and bridging social capital respectively.

The first linear regression in Table III has intention to use an online community as the dependent variable and user beliefs such as perceived usefulness, perceived ease of use and perceived enjoyment as independent variables. Along with them, system trust and interpersonal trust are also

TABLE II. CORRELATION MATRIX AND SQUARE ROOTS OF AVE

Scale	SNS Usage	SE	PE	IT	BOSC	BRSC	ST	PU	PEOU	IU	SI
SNS Usage	0.954										
SE	0.267**	0.967									
PE	0.453**	0.494**	0.951								
IT	0.209*	0.298**	0.229**	0.918							
BOSC	0.278**	0.451**	0.386**	0.416**	0.928						
BRSC	0.474**	0.549**	0.491**	0.157	0.349**	0.948					
ST	0.335**	0.455**	0.476**	0.625**	0.552**	0.377**	0.826				
PU	0.386**	0.554**	0.498**	0.221*	0.455**	0.598**	0.410**	0.892			
PEOU	0.200*	0.497**	0.510**	0.254**	0.386**	0.356**	0.386**	0.565**	0.950		
IU	0.214*	0.398**	0.264**	0.113	0.225**	0.370**	0.285**	0.539**	0.337**	N/A	
SI	0.217*	0.343**	0.374**	0.302**	0.456**	0.392**	0.602**	0.506**	0.409**	0.366**	N/A
Mean	3.32	3.56	3.65	2.89	3.08	3.65	3.29	3.55	3.86	3.53	3.32
Variance	0.549	0.419	0.387	0.509	0.411	0.421	0.435	0.395	0.333	0.640	0.485

Notations used above: SNSU - Social networking site usage; SE- Self-efficacy; PE= Perceived enjoyment; IT- Interpersonal trust; BOSC- Bonding social capital; BRSC- Bridging social capital; ST- System Trust; PU- Perceived Usefulness; PEOU- Perceived ease of use; IU- Intention to use; SI- Social Influence

independent variables. This model has a good fit and explains variance with $R^2 = 0.303$. With this result we infer that perceived usefulness was the most important determinant for intention to use an online community. Perceived ease of use and perceived enjoyment are not found to be significant because they are indirectly influencing intention to use an online community through perceived usefulness. System trust and Interpersonal trust are also not found to be statistically significant. Hence only hypothesis H1b is supported but hypotheses H1a, H2a, H2b, H3a and H3b are not supported.

TABLE III. LINEAR REGRESSION FOR INTENTION TO USE AN ONLINE COMMUNITY, BONDING SOCIAL CAPITAL AND BRIDGING SOCIAL CAPITAL

Linear Regression for	Variable	B	Std. error	β
Intention to use an online community $R^2 = 0.303; F = 10.939$ (p < 0.01)	Constant	0.981	0.462	
	Perceived Usefulness	0.637	0.122	0.500**
	Perceived Ease of use	0.072	0.133	0.052
	Perceived Enjoyment	-0.077	0.123	-0.60
	System Trust	0.173	0.131	0.143
	Interpersonal Trust	-0.097	0.108	-0.087
Bonding social capital $R^2 = 0.395; F = 13.608$ (p < 0.01)	Constant	0.316	0.349	
	Perceived Usefulness	0.190	0.095	0.186*
	Perceived Ease of use	0.057	0.101	0.051
	Perceived Enjoyment	0.028	0.093	0.028
	System Trust	0.295	0.099	0.304**
	Interpersonal Trust	0.113	0.081	0.126
Bridging social capital $R^2 = 0.419; F = 18.170$ (p < 0.01)	Constant	1.032	0.342	
	Perceived Usefulness	0.493	0.090	0.477**
	Perceived Ease of use	-0.081	0.099	-0.072
	Perceived Enjoyment	0.250	0.091	0.240**
	System Trust	0.138	0.097	0.141

where N = 132 ; ** p < 0.01 , * p < 0.05

The second linear regression in Table III shows the linear regression with bonding social capital as the dependent variable and user beliefs such as perceived usefulness, perceived ease of use and perceived enjoyment as independent variable along with system trust and interpersonal trust. This linear regression model has good fit and explains about 39.5% variance. The coefficients for perceived usefulness and system trust are found to be significant but perceived ease-of-use, perceived enjoyment and interpersonal trust are not significant. Hence hypotheses H1f and H3c are supported but hypotheses H1d and H2c are not supported.

The third linear regression in Table III shows the linear regression with bridging social capital as the dependent variable and user beliefs such as perceived usefulness, perceived ease of use and perceived enjoyment as independent variable along with system trust and interpersonal trust. This linear regression model has good fit and explains about 42% variance. The coefficients for perceived usefulness and perceived enjoyment are found to be significant but perceived ease-of-use and system trust are not significant. Hence hypotheses H1g and H2b are supported but hypotheses H1e and H3d are not supported.

Table IV shows the four linear regressions with dependent variable as perceived usefulness, perceived ease-of-use, perceived enjoyment and system trust respectively.

The first linear regression in Table IV shows the linear regression with perceived usefulness as the dependent variable and external variables such as SNS usage, social influence and SNS self-efficacy along with perceived ease-of-use as independent variable. This linear regression model has good fit and explains about 52% variance. The coefficients for SNS usage, social influence, SNS self-efficacy and perceived ease-of-use are found to be significant. Hence all hypotheses related with this linear regression model viz. H1c, H4a, H5a and H6a are supported.

The second linear regression in Table IV shows the linear regression with perceived ease-of-use as the dependent variable and external variables such as SNS usage, social influence and SNS self-efficacy along with perceived enjoyment as independent variable. This linear regression model has good fit and explains variance with $R^2 = 0.377$. The coefficients for social influence, SNS self-efficacy and perceived enjoyment are found to be significant but SNS usage are not significant. Hence hypotheses H2d, H5b and H6b are supported while hypothesis H4b is not supported.

The third linear regression in Table IV shows the linear regression with perceived enjoyment as the dependent variable and external variables such as SNS usage, social influence and SNS self-efficacy as independent variable. This linear regression model has good fit and explains variance with $R^2 = 0.385$. The coefficients for social influence, SNS self-efficacy and SNS usage are found to be significant. Hence all hypotheses related with this linear regression model viz. H4c, H5c and H6c are supported.

The fourth linear regression in Table IV shows the linear regression for system trust as the dependent variable and social influence as independent variable. This linear regression model has good fit and explains variance with $R^2 = 0.362$. The coefficient for social influence is found to be significant hence we conclude hypothesis H6d is supported. Fig. 2 shows the relationships supported in theoretical model by our empirical study.

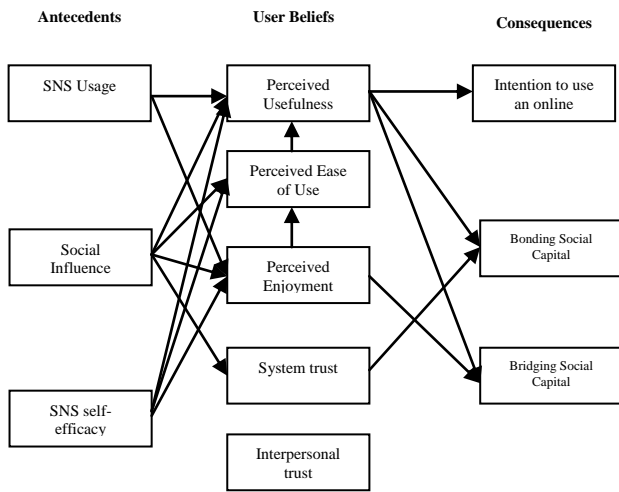


Figure 2. Relationships supported empirically

IV. DISCUSSION

In our study, first we tried to establish the relationships between the external variables, user beliefs and their consequences. The benefits in form of bonding social capital and bridging social capital were also incorporated and the effect of user beliefs and external variables on them was also tested. The results show that intention to use an online community is directly driven by its perceived usefulness, because the more a user finds an online community useful, more likely he/she is to join and use that community. The perceived enjoyment and perceived ease-of-use do not have a direct impact on use of online community but they influence the user's decision indirectly by increasing the usefulness aspect of an online community. This is in line with the voluntary context of online community usage, whereby the perceived enjoyment and ease-of use of online community increases its perceived usefulness. For example, the easier a user finds an online community features, the more useful that community will become for him/her, because he/she would now be able to derive more from the community experience using those features. Therefore, while it may not be expected that an online community may be used for the purpose of enjoyment, but if a user enjoys the experience then it may contribute towards the usefulness of that online community. Also with our study we once again established the robustness of TAM in being able to predict the intention to use an information system. Furthermore, the usage, social influence and self-efficacy of social networking sites influence the user beliefs. Thus, the more time a user spends on a social networking site, the more likely he/she is to gain the ability and skills, and therefore become comfortable with the social networking site features. Also this would help in the formation of

TABLE IV. LINEAR REGRESSION FOR PERCEIVED USEFULNESS, PERCEIVED EASE OF USE , PERCEIVED ENJOYMENT AND SYSTEM TRUST

TRUST				
Linear Regression for	Variable	B	Std. error	β
Perceived Usefulness $R^2 = 0.517$; $F = 34.004$ ($p < 0.01$)	Constant	0.088	0.305	
	SNS usage	0.171	0.055	0.202**
	Social Influence	0.227	0.071	0.251**
	SNS self-efficacy	0.263	0.062	0.271**
	Perceived Ease of use	0.313	0.081	0.287**
Perceived Ease of use $R^2 = 0.385$; $F = 19.196$ ($p < 0.01$)	Constant	1.471	0.293	
	SNS usage	-0.52	0.061	-0.067
	SNS self-efficacy	0.254	0.073	0.285**
	Social Influence	0.169	0.064	0.204**
	Perceived Enjoyment	0.3	0.083	0.323**
Perceived Enjoyment $R^2 = 0.385$; $F = 26.760$ ($p < 0.01$)	Constant	1.022	0.299	
	SNS usage	0.269	0.061	0.320**
	SNS self-efficacy	0.332	0.073	0.345**
System Trust $R^2 = 0.362$; $F = 73.755$ ($p < 0.01$)	Constant	1.393	0.225	
	Social Influence	0.570	0.066	0.602**

where N = 132 ; ** $p < 0.01$, * $p < 0.05$

positive beliefs about using an online community. The social influence in voluntary context is driven by internalization and identification component [20] which affects the user perceptions about technology and thus it is seen to be influencing the TAM variables as well as system trust. However we did not find any influence of system trust and interpersonal trust on intention to use an online community. This is in contrast with the expected effect and thus needs to be further tested and investigated. It may be the case that since respondents in this study were majorly college students, they may have known each other through earlier interactions thus they were able to trust the online community and its members. We may test this effect on respondents who are likely to join an online community which is not as much influenced by their offline interactions. Still we found that in terms of benefits of joining an online community the bonding social capital is influenced both by user beliefs about online community as well as the system trust component on the online community. Thus members who are joining an online community and remain with that community for a long time are able to strengthen the system trust component and hence would be able to benefit in terms of their bonding social capital. The strong tie formation with community members would provide emotional support to the user. The

information exchange benefits from a diverse set of users of an online community in form of bridging social capital is seen to be derived directly/indirectly from the user beliefs i.e. TAM variables perceived usefulness, perceived ease-of-use and perceived enjoyment. A user finding the online community useful and enjoyable is likely to develop new relationships with online community members and thus would be exposed to diverse information exchanges contributing to the bridging social capital. However, again, we could not establish the relationship of trust on bridging social capital which thus needs to be investigated further with a more diverse sample of users for our study.

V. CONCLUSION AND FUTURE SCOPE

In this study, we have developed a theoretical model which incorporates the theories such as TAM and flow theory to explain the user behavior in the community formation process. We conclude that usefulness of online community is an important driver for joining an online community. The factors, identified from our research study, such as self-efficacy and social influence can be used towards making an online community useful. We also found that online social capital for both strong and weak ties is built mainly due to the usefulness of an online community. Trust in online communities also strengthen the relationships among users of an online community and thus contributes towards bonding social capital.

Future direction can be to compare the results from our study with results from different type of online communities. This approach can either strengthen or provide more insight into the results from our study.

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