The Paradox of Popularity: Why Popularity Does Not Signal Participation

Full paper

Alexandra Toll
University of California, Irvine
alex.toll@uci.edu

Denis Trapido
University of Washington
dtrapido@uw.edu

Abstract

Although strong ties are typically formed in shared settings, we know little about the characteristics of settings that attract and retain people. Meanwhile, the Internet has broadened the search for settings. As people turn to the web to find local, offline social settings to join, simple, searchable features– notably location, interest, size and age–guide their choices. Whether such features are helpful for establishing meaningful social relations has not been empirically tested. Using unique data on participation in online to offline communities, we explore the characteristics that attract members and the features that aid in their retention. We find that, although prospective members seek large and established groups when searching for organizations, such groups are less likely to foster community through repeated participation.

Keywords

social settings, activity focus theory, social ties, participation, community development

Introduction

With the growing understanding that individual and organizational outcomes depend on their embeddedness in networks of social ties, scholars are increasingly asking where social ties come from. Research has shown that network ties may form in purely dyadic mutual selection as actors purposefully seek out potential partners (Kogut, 1988; Nohria and Garcia Pont, 1991; Lincoln et al., 1992; Gulati and Gargiulo, 1998, Powell et al., 2005), or in triadic closure as two actors get introduced by a broker (Burt, 1992; Obstfeld, 2005). More typically, however, tie formation is a two-step selection process: first, actors get involved in a social setting where face-to-face interaction happens; next, they connect to a fellow participant in the setting (Feld, 1981; Putnam, 2000; Sorenson and Stuart, 2008).

Settings such as workplaces, schools, voluntary organizations, and interest-specific clubs mass-produce social ties in quantities that dyadic or mediated tie building outside a setting can rarely match. Because so many ties are formed in social settings, the actors' choice of the settings largely determines with whom they socially connect. The features of the settings that inform the joining decisions are thus a more potent determinant of an individual's network ties than the features of a specific potential tie partner (Feld, 1981). The role of these features in shaping social networks has grown with the rise of the Internet. As people turn to the web to look for local, offline social settings to join, simple, searchable features of the settings – notably location, interest, age and size – increasingly guide their choices. Do these feature guide individuals to settings that are most helpful for establishing meaningful social relations?

In this study, we examine unique and detailed data on participation in online to offline communities to answer this question. We find that, although prospective members seek large and established groups when searching for organizations because these have attracted a large crowd and withstood the test of time, these groups are less constraining and result in less dense networks because of the difficulties they face in bringing members together to share activities (Feld, 1981, 1982; Butler, 2001; Sander, 2005). Thus, as people prefer popular communities, they are, paradoxically, led into settings where they are unlikely to establish meaningful social relations. We call this pattern the paradox of popularity.

This paradox has important implications. It suggests that, being attracted to settings that are unhelpful in building meaningful social ties, people routinely end up socially under-embedded. Moreover, the Internet may be aggravating this tendency by highlighting features of settings that are not indicative of meaningful social connectedness.

What attracts people to settings?

The sociological literature on social networks highlights three key mechanisms underlying tie formation (Rivera, Soderstrom, & Uzzi, 2010). Purposeful dyadic ties are formed based on mutual selection and are believed to stem from matching individual attributes. Relational perspectives, on the other hand, emphasize tie formation as brokered by third parties and rely on existing structural characteristics to explain new connections. A third mechanism of tie formation, and the basis of this study, highlights the role of social and cultural environments in which actors meet. Such shared circles (Simmel, 1908; Grosetti, 2005) or settings (Feld, 1981), by way of the spatial proximity that they engender, create a focal point of interaction and joint activity.

Feld's (1981) activity focus theory foregrounds settings, and the interactions they facilitate, as the source of new ties. In doing so, Feld de-emphasizes individual agency in seeking relations. People develop bonds through frequent meetings in loosely connected circles focused on shared interests without the need or the intent to seek out such bonds (Feld, 1991: 1031). The process of focused activity around shared interests and social interaction "does not require that the participants have any understanding whatsoever of the underlying focusing structures and processes (1017)." The theory highlights actors' immediate environment, including neighborhood, school, and church, as typical settings in which bonds are forged.

Focus theory, however, does not provide any explanation or predictions regarding the factors that may aid actors in their choice of settings beyond proximity. Individuals enter social circles based on different circumstances and life stages and these augment their network of friends and support. Whereas early childhood connections stem from familiar bonds and pre-existing relations, these give way to a broader network of acquaintances in adolescence through brokered connections. As adults, people enter new settings based on work, education, and personal needs. These bonds are not forged through existing friendships, but rather the result of life choices, proximity and individual preferences (Iriberri & Leroy, 2009).

Sorenson & Stuart (2008) suggest "the most salient shortcoming in the literature pertains to theory that can explain the emergence of ties between spatially, relationally, and socio-demographically distant actors (266)." Addressing this gap, their study of U.S. venture capital firms explored the characteristics of startups (settings) that attract new capital (267). They found that 'fashionable settings' attract new investors, who typically evaluate size and maturity as signals of existing successful venture partnerships. When such relations are highly interconnected in dense networks, the authors hypothesize and prove, network expansion is made possible; members are more likely to welcome strangers when they can share the risk with existing connections whom they trust.

Nevertheless, even distant ties are produced through existing network connections and the search for mutual gain. Many new connections are formed on the basis of referrals from friends or acquaintances. For example, actors often rely on their alma mater or previous employers to tap into new talent and explore common ground when seeking employment. Such network affiliations are also considered when seeking new business partners for joint ventures or funding opportunities. Because the three recognized perspectives on tie formation (individual attributes, existing relations and shared settings) have been studied in isolation, it is difficult to determine if they are distinct or related phenomena masking the prevalence of one particular factor (Rivera, Soderstrom, & Uzzi; 2010).

Whether brokered through friends or initiated by actors' search for new settings, a common practice in the quest for ties is the search for signals of quality (Fombrum & Shanley, 1990; Rangan, 2000; Stuart & Sorenson, 2008). Press recognition or top performance indicators establish prestige or status, and these signals may be deemed indicators of success. Much like press coverage or attention may be a signal of quality and highlight a fad or "hot" enterprise, organization, or practice (Sorenson & Stuart, 2008), a common theme throughout the limited literature on distant tie formation is the search for popularity as an indicator of success. Popularity is defined in Merriam Webster's Dictionary as "the state of being liked, enjoyed, accepted or done by a large group of people." When quality is difficult to determine, affiliations

with popular actors may serve as a readily available substitute for more objective measures (Zuckerman, 2012; Ahuja, Soda, & Zaheer, 2012; Podolny, 1993); for example, signals of popularity have been used as determinants of quality when selecting music and books from available media (Kovacs & Sharkey, 2014; Tucker & Zhang, 2011).

In addition to providing an indirect measure of quality, popularity may also signal a lower risk to potential participants. Observational learning, the practice of using information about previous purchases, visits, or members, is credited with increasing attention to a product as people use information about previous purchases or interactions as an indicator of success and quality to justify a purchase (Tucker & Zhang, 2011; Chen, Wang & Xie, 2011; Salagnik, Dodds, & Watts, 2006; Cai, Chen & Fang, 2009). Armed with the knowledge that popularity is self-reinforcing, businesses and organizations are increasingly providing information about popularity, such as frequency with which a product is purchased or viewed as well as information about how many visitors have frequented a website or become members of an organization in order to attract new entrants (Shapiro & Varian, 1998).

Recognizing the role that popularity plays in signaling quality when objective measures are not available, we argue that group size is a signal of popularity for prospective members seeking to join new groups. Whether risk is related to financial or time investment, groups with a large membership base provide an opportunity for prospective members to sample the setting without a great upfront commitment.

H1: The larger a group is, the higher the rate at which it attracts new members.

Furthermore, groups that have hosted many events and withstood the test of time signal ongoing interest from members and suggest they are established in terms of their ability to attract a crowd consistently. Iriberri and Leroy (2009) note, "As an online community matures, the need for a more explicit and formal organization and regulations, rewards and contributions, subgroups and discussion of more or less specific topics is evident. [If achieved in] this stage, the community is strengthened and trust and lasting relationships begin to emerge." We posit that a group's age will also signal quality to prospective members.

H2: The older a group is, the higher the rate at which it will attract new members.

The Paradox of Popularity

In order to assess whether the criteria for setting selection are conducive to the formation of lasting community ties, it is necessary to establish a measure of group's success at facilitating ties. Group members often seek to reap benefits of affiliation that extend beyond selection of a faddish group or common interest, as social groups provide benefits related to support, access to information, companionship, and even facilitate collective action (O'Mahoney & Lakhani, 2011). Such benefits or characteristics of a group form the basis for community development. Community may be broadly defined as "voluntary collections of actors whose interests overlap and whose actions are partially influenced by this perspective (O'Mahoney & Lahani, 2011)." Fostering repeat attendance and community development, therefore, requires "belonging to a group or a community based upon the perception of similarity among members where reciprocal relations facilitate the satisfaction of individual needs (Jariego & Armitage, 2007)."

As members participate in group activities, they contribute their time and energy to creating a sense of community that ultimately results in benefits for all members and creates the social support that attracts and retains new members (Butler, 2001). From this perspective, as members are the primary source of group resources, larger groups by definition profit from a greater resource pool and therefore signal greater success. In online to offline communities, particularly, the ability to post pictures about group activities and testimonials from loyal members creates a greater pool of success indicators whereby prospective members perusing the group's online site may gleam a group's success.

Despite the potential resource advantages (McPherson, 1983; Wittenbaum & Stasser, 1996), however, large groups suffer from negative effects due to their size. Specifically, they experience greater difficulty in converting resources into benefits for members (Haveman, 1993). In larger groups, it is difficult to get to know all members; therefore, establishing personal relationships and social support is challenging (Feld,

1982). Without access to all members and the close bonds that bring people together in a common group identity, determining where specific resources may be found and the best way to tap those resources becomes a challenge. As Butler (2001) concludes, "the undersupply of resources in larger structures is reflected in the general finding that individuals in larger structures tend to be less committed, less satisfied, and hence less likely to join or remain members (349)."

A key factor that exacerbates the disconnect between size and community development is that people are attracted to larger groups because they are optimistic about the potential benefits that such groups portend (Brinthaupt et al., 1991). In online to offline communities, where virtual membership is inexpensive and precarious, the urgency to participate in offline activities may be lessened. When ultimately faced with the challenges related to larger group sizes and coordination in an offline, large group setting, they become disenchanted more quickly, particularly given the high expectations they set upon initially seeking out popular groups. Therefore, the paradox of popularity becomes evident, where members are attracted to larger groups because they are hopeful about the positive effects of size but they are frustrated by the challenges of large groups and are therefore less likely to remain members.

Social groups also carry the potential to bring people together in action for a common cause, and collective action is more likely to originate and succeed among groups that sustain participation among members through intense interaction (Snow, Zurcher, and Ekland-Olson, 1980: 795). However, collective action is also impacted by large group size in a paradoxical manner. Whereas large groups are more likely to house the kind of people who are likely to organize and mobilize, they challenge the perception among group members that their contribution will bear an impact on the cause. Social loafing is more likely to occur in large groups, where individuals believe that their actions will not be as important to the cause if others are willing to participate. Olson's seminal work on this premise, *The Logic of Collective Action*, highlights this paradox by noting that social processes, including the feeling of group solidarity, are more likely to overcome the "collective dilemma" in groups of medium size rather than large groups.

Echoing such findings, Sander's (2005) research on political online to offline groups found that size appeared to be a factor in members' decision to return to the group. He concluded that smaller groups make it easier for participants to "get more airtime" increasing the chance that they will discover similarities within the group that may lead to personal friendships. Given the literature suggesting that people perceive group size as a measure of quality, and the puzzling evidence that smaller groups provide more opportunities to interact on a meaningful level, we hypothesize the existence of the paradox of popularity.

H3: Large groups will have lower rates of repeat event attendance at offline events.

H4: Older groups will have lower rates of repeat event attendance at offline events.

New participants in settings that promote distant ties lack overlapping foci (interests) that provide varied opportunities for interaction. Therefore, more frequent interactions within a setting signal repeat opportunities with which to establish friendship ties early into the experience of membership. Institutional practices that enable frequent interaction and opportunities for cooperation are critical to the development of lasting relations among members (Small, 2009). As strong ties are characterized by "the amount of time, the emotional intensity, the intimacy, and the reciprocal services" exchanged by actors, frequent interactions provide fodder for intense relationships forged through time spent together (Granovetter, 1973: 1361).

In online communities, message posts are the equivalent of meetings. Because online communities lack social cues available during face-to-face-interactions, contextual cues, such as frequent messages, signal group engagement (Wise, Hamman, & Thorson, 2006: 27). Not surprisingly, Iriberri and Leroy's (2009) review of the literature on virtual communities found that "the most common metric of success used in empirical research thus far were volume of membership contributions and quality of relationships."

Given the importance of frequent interactions on signaling a group's success in online communities, we hypothesize a positive relationship between frequency of member interactions and community development in online to offline communities.

- **H5: The more frequently members interact, the greater the rate of repeat attendance at offline events.**

Data

Data from the social networking site, Meetup.com is used as the basis for the analysis of community development through repeat attendance at group sponsored face to face (offline) events. Technology facilitates the creation of new forms of organizing by "integrating physically based and virtual communities of interest (Blanchard & Horan, 1998)." Meetup.com, is heralded as "the largest network of local voluntary groups in the world (Lai, 2014); and, given its extensive record of members, group communications and meetings, as well as event attendance data, it provides a wealth of information with which to conduct an analysis of settings.

Meetup.com's history and founding mission make it an interesting "space" for analysis. Its mission is to "revitalize local community and help people around the world self-organize… (About Meetup, 2014)." The site's founders were influenced by the public's grief and an accompanying new-found emphasis on community they perceived to be taking hold of New York City after the September 11th attacks; they felt compelled to challenge the conclusions ominously set forth in Putnam's *Bowling Alone: The Collapse and Revival of American Community* (2000) and to create a new platform bringing people together. In 2001, the social networking site launched in various cities across the nation, and its base of communities nationwide and in many countries around the world continues to grow.

Analysis of Meetup.com data enables a detailed review of participation in group offline events throughout an extensive period and across many groups. Previous research on community development and the success of face to face groups has been limited to ethnographic data or survey data about the intent to participate in the future. Because Meetup.com allows meeting organizers to record information about events, RSVP tallies, and membership information, this unique dataset facilitates an analysis of actual behavior among group members across their membership and throughout groups' lives.

Furthermore, Meetup.com provides an example of the increasingly ubiquitous practice of using social media sites to advertise and search for interest-specific local groups. Meetup.com and similar social media outfits provide a platform in which groups may be established and members recruited in order to arrange local face to face meetings. Despite their growing popularity, little research exists about the impact of such groups on the formation of ties and the development of community from which resources and support become available to members (Sessions, 2010).

A key component of the Meetup.com site that is used in sample selection for this study is its search capability. Upon accessing the main site, Meetup.com users are able to perform a local area search in order to find meetup groups that are geographically proximal. Using this feature, all groups within a 25-mile radius of Irvine were selected. Irvine is located in Orange County in Southern California. The city spans 66 square miles and lies between two large metropolitan cities in Southern California, Los Angeles and San Diego. The exhaustive review of all groups in the area enables analysis of a complete set of groups that a person may consider when selecting a setting in the area. Once the complete set of groups in the geographic zone were obtained (3,271 groups as of December 2014), the data were filtered using the following characteristics: (1) active at the time of data selection, (2) containing three or more members, and (3) spanning a record of offline events greater than ten. Using these criteria, a total of 682 groups, each with 18 months of offline event specific data, were selected, representing diversity with respect to group type, and size as well as an account of group dynamics throughout different points in their history.

Measures

Dependent Variable: New Members

The dependent variable in the analysis of group selection captures the number of members who have joined since the last event. It is a continuous positive variable that is zero when no new members join between events and greater than zero when one or more new members join. This measure does not take into consideration negative changes in membership through leadership mandate or self-removal. Specifically, we are interested in capturing a group's success at the event level; in other words, did participation at the last event induce repeat attendance at the next scheduled event. Any changes in membership that are unrelated to a positive appraisal of a previous event (i.e., community development) is not relevant to our analysis.

Dependent Variable: Repeat Attendance

The dependent variable in the analysis of group retention is a proportion indicating the number of people in attendance at an event who repeat attendance at the next event. It is coded as a continuous variable from zero to one and is calculated by dividing the number of repeat event attendees who are present in the next event by the total number of event attendees. This measure captures the staying power of an event's participants' attendance commitments to the group; more specifically, it gauges the extent to which the members retained their commitment to the group after the event. When the measure is zero, no attendees of the event repeated attendance at the next event; whatever commitments brought the attendees to the event, none of them had the staying power to survive to the next event. When the measure is one, all event participants' attendance commitments persisted to the next event.

Creation of friendship ties through a meetup event is one of the key factors in a members' decision to participate in future gatherings (Sander, 2005:379). In his study of political groups, Sander found the strongest predictor of re-attendance, after participation in other meetup groups and selection of small groups, was the development of relations within the group during a past event.

In previous studies, researchers argued that group size is a difficult variable to capture in Meetup.com groups or any group that comes together online to meet offline. Specifically, Lai (2014) suggests that there is a stark difference between attendance and membership in face to face meetings, as prospective members may choose to join a group and receive notices about its activities without ever intending to go to an offline event. Furthermore, key problems identified in online groups include a high drop-off rate, low participation and a transient nature of group commitment. Nevertheless, studies find that social capital is generated in many of these groups and that some are able to effectively foster a sense of community (Lai, 2014; Sander 2005). Groups where social capital creation thrives retain members.

In the current study, only members who have attended a meetup are considered in the calculation of repeat attendance. By using Meetup event (offline meetings) participants as the pool of members for the calculation of re-attendance and community development, the baseline for community development is set to include members who join the group in order to meet face to face rather than establish online membership. By calculating re-attendance based on two temporally proximal events, we indirectly measure the extent to which participants of a meetup were able to experience community development given their last experience with the group. We do not take into consideration the drop off of old members and the addition of new members throughout a group's tenure that are key characteristics of these groups, but not necessarily a factor in all offline groups.

Finally, using this method of calculation allows us to consider each event as a separate group, as each event represents an opportunity for members to develop a sense of community and to gauge the group's potential in forging strong and lasting relations. Using this approach, the data expands considerably, as eighteen months or more of events hosted within the 600+ groups selected are considered independently, with robust estimation of standard errors in order to take into account clustering around group observations.

Independent Variables

Membership Base was measured as the total count of members who joined the group before or on the day of the last event. Because our unit of analysis in measuring new membership as well as repeat attendance is the event, membership records were used to compare individual member join dates against event dates in order to create the count of new members by an event period. Membership Size (Total) was measured as the sum of the membership base and new members at the time of each event. This measure was used as an independent variable in the regression on repeat attendance.

Age was measured in two ways: based on the count of **Days** between the group's creation date and the current event and on the number of Events hosted since the group's creation and the current event.

Days between Events is an event level variable denoting the count of days that transpired between the current event observation and the previous event. At the group level, an average of days between events was calculated and used to classify groups into one of three dummy variables: **Less than Monthly** received a value of one across all groups whose average days between events is greater than 40 days, **Monthly** received a value of one across all groups whose average days between events was between 20

and 40, and ***More than Monthly*** received a value of one across all groups whose average days between events was less than 20. ***Monthly*** was dropped from the regression equations and used as the referent with which to compare the effect of more or fewer days between events.

Group Design Characteristics

Each group name and description was analyzed and placed into one of four categories that resemble the typology of groups proposed by Small (2009). Groups who gather to participate in special interest related activities such as sports, music, and language were categorized as ***Clubs***. Similarly, groups who gather for business networking opportunities were categorized as ***Networking***, and groups who provide instructional services in areas such as language, finance, spirituality, etc., were categorized as ***Education***. A fourth category labeled ***Social*** was used to denote groups who gather for sight-seeing, dating or adventure seeking activities, but these groups were not included in the analysis as they generally post events across groups who receive funding and support from common sponsors and do not require membership for participation. With three groups remaining, Education was dropped from the regression equations and used as the referent with which to compare the effect of different types of groups.

Upon a content analysis and review of all of the group sites, dummy variables denoting group norms such as ***Approval*** of membership applications by the organizer and collection of ***Event Fees*** for participation were also used. Table 1 provides descriptive statistics and the correlation matrix for the key variables in the models predicting new membership and repeat participation.

Table 1
Descriptive Statistic and Pearson Correlation Coefficient for Variables in New Membership & Participation Analyses
(n=126,035 events across 621 groups)

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 New Members	1.7	4.57														
2 Repeat Attendance	0.4	0.37	-0.06													
3 Total Membership	309.11	393.67	0.12	-0.31												
4 Events (Age)	362.43	488.2	-0.12	-0.26	0.69											
5 Days (Age)	1030.81	756.62	0.03	-0.19	0.44	0.42										
6 Less (Frequency)	0.01	0.11	0.25	0.01	-0.05	-0.08	-0.03									
7 Monthly (Frequency)	0.06	0.24	0.18	0.07	-0.09	-0.17	0.01	-0.03								
8 More (Frequency)	0.93	0.26	-0.28	-0.07	0.1	0.19	0.01	-0.4	-0.91							
9 Days Between Events	7.09	19.15	0.49	0.06	-0.11	-0.19	-0.01	0.31	0.27	-0.38						
10 Membership Base	307.38	393.67	0.11	-0.31	0.99	0.69	0.44	-0.05	-0.09	0.11	-0.12					
11 Clubs (Category)	0.73	0.44	-0.04	-0.22	0.1	0.14	0.19	-0.04	-0.09	0.1	-0.04	0.1				
12 Networking (Category)	0.12	0.32	0.07	0.16	-0.14	-0.19	-0.15	0.02	0.14	-0.14	0.07	-0.14	-0.6			
13 Education (Category)	0.15	0.36	-0.01	0.13	0.01	0	-0.1	0.04	-0.02	0	-0.01	0.001	-0.7	-0.2		
14 Approval	0.16	0.36	-0.01	-0.04	-0.01	-0.01	0.05	-0.02	0.05	-0.03	0.02	-0.01	0.05	0.04	-0.11	
15 Fee	1.87	9.17	0.03	0.12	-0.03	0.04	-0.01	-0.02	-0.02	0.03	-0.03	-0.03	-0.16	0.05	0.16	-0.04

Analysis & Findings

The Breusch Pagan test was used to confirm the presence of heteroskedasticity resulting from the panel nature of the data set. As a result, OLS regressions with robust and clustered standard errors were used in the analyses.

Table 2 presents the results of the OLS regression on new membership, indicating support for Hypothesis 1. That is, after accounting for the group interest categories (i.e., club, networking, education), meeting frequency, and other group characteristics that may impact the dependent variable (i.e., leadership screening of new member requests and whether groups collect fees for event attendance), membership base has a positive and significant effect on new membership ($\beta = 0.004$, $p<0.01$). Prospective members are more likely to select large groups when presented with a list of options in their geographic area and interest category. Also, as Hypothesis 2 proposes, the correlation coefficient for Days, a measure of the group's age, is positive and significant ($\beta = 0.0005$, $p<0.01$). Nevertheless, the negative and significant coefficient of its quadratic term indicates a turning point after which the age becomes less desirable to prospective members. These results provide a baseline of support for the proposed popularity paradox, as more popular groups (i.e., large and established) indeed attract more members regardless of whether they promote community development.

Table 2 also provides support for nonlinearity with respect to prospective members' preferences regarding meeting frequency. Specifically, relative to groups that meet on a monthly basis, meeting less than once a month increases the likelihood of attracting new members ($\beta = 7.11$, $p<0.01$) whereas meeting more than once a month has a negative effect on new member recruitment ($\beta = -3.25$, $p<0.01$). It is important to

note, however, that because the period between measures of new membership are events, groups that meet less frequently have a larger gap between events (on average 2-3 months) and therefore account for larger periods between observations. Relatedly, Events have a slightly negative and significant effect on membership recruitment, (β = -0.003, p<0.01), suggesting that prospective members are not necessarily searching for groups who have met frequently as they search for established groups, perhaps considering time obligations when selecting a new group to join.

Table 2
Results on New Membership

	Coefficient		SD
Constant	4.22	***	0.44
Membership Base	0.004	***	0.00
Days (mean centered)	0.0005	***	0.00
Days ^2 (using mean centered days)	-0.0000002	***	0.00
Events	-0.003	***	0.00
Less	7.11	***	1.77
More	-3.25	***	.41
Approval	-0.17		0.13
Fee	0.003		0.003
Club	0.22		0.31
Networking	0.7		0.44
R	0.17		
N	126,035[a]		

*p<0.10
**p<0.05
***p<0.01

[a]standard errors adjusted across 621 clusters

Relative to education related groups, Clubs (β = 0.22) and Networking groups (β = 0.7) are more likely to attract new members. These findings are not surprising, given that special interest (clubs) and networking groups account for 84% of all groups in the sample; presumably, supply is related to the demand for such groups among meetup users. The coefficients for group design characteristics are not significant with respect to new membership recruitment decisions.

Completing the assumptions of the proposed popularity paradox, Table 3 provides support for Hypotheses 3 and 4. As a group becomes larger (β = -0.0002, p<0.01) and more established (β = -0.0001, p<0.01) in terms of the number of events hosted, its rate of repeat attendance and ability to promote community development is hindered. Although prospective members appear attracted to larger and more established groups, these groups are less successful in retaining their interest from one event to another than smaller and nascent groups on average.

Interestingly, although prospective members appear to be attracted to groups that meet on an infrequent basis, groups who meet on a monthly basis have higher repeat attendance rates than those who meet more (β= -0.036, p<0.01) or less (β= -0.036, p<0.01) frequently. The results reveal a curvilinear relationship between meeting frequency and repeat attendance. In other words, only partial support is found for Hypothesis 5, as increasing meeting frequency has an impact on repeat attendance up to a point after which it has a negative effect.

Conclusion

This study explores the ways in which individuals select settings in an online space, and confirms a paradoxical relationship between current signals of success – namely, popularity – and related effects on community development through repeat attendance. The finding that large and established groups are less able to promote and instill a sense of community among members is consistent with the literatures on

social movements and crowd sourcing, among others. However, the attempt to highlight two mechanisms that may aid groups in retaining members and creating community provides a first step in the effort to ensure the Internet's place as a "telephone", spreading the word about community initiatives and bringing people together, rather than a "television" creating opportunities for people to peek through a screen and witness communities in action without the need for participation or engagement (Putnam, 2000).

By uncovering the paradoxical relationship between recruitment mechanisms and successful retention practices, we highlight the need for further research into the elements of group design and development that promote community development through repeat attendance. Social media outlets and group organizers may find insight in our conclusions about the value of increasing the costs of membership in order to promote community development through repeat attendance. Groups whose recruitment policies create a sense of exclusivity, differentiating the out group from the in group, and those who raise the bar on the cost of attendance so as to overcome the obstacles of anonymity in online communication will be better equipped to develop community among their members.

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