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An Examination of the Factors Contributing to Participation in Online Social Platforms

Abstract

Purpose. This study examined participation in online social platforms consisting of information exchange, social network interactions and political deliberation. Despite the proven benefits of online participation, the majority of Internet users read social media data but do not directly contribute, a phenomenon called lurking.

Methodology. A survey was administered electronically to 507 participants and consisted of ten sections in a questionnaire to gather data on the relationship between online participations and the following variables: anonymity, social value orientation, motivations, and participation in offline activities, as well as the Internet's political influence and personality traits.

Findings. Findings show that users with high levels of participation also identify themselves, report higher levels of extroversion, openness and activity outside the Internet, the motivations being an intermediary variable in the relationship between the variables.

Originality/value. The study shows that participation in online social platforms is not only related to personality traits, but they are impacted by the nature of the motivations that drive them to participate in the particular social platform, as well as by the interest towards the specific topic, or the type or nature of the social group with whom they are communicating.

Keywords: online social platforms, participation, openness, extroversion, anonymity, motivations.

Introduction

Online social platforms are Internet spaces that allow people with similar interests to congregate and to discuss common problems and issues and to offer information and support about a variety of topics such as health, recreation, professional and technical subjects (Kummervold, *et al.*, 2002). These online spaces are ever developing and evolving to fit the needs of their creators and users (Ridings and Gefen, 2004). The primary functions of online social platforms are information exchange, social network interactions and political deliberation (Burnett, 2000; Ridings and Gefen, 2004; Perez, 2013). However, despite the benefits gained from participation in these types of online social media, research has shown that only about 1% of users account for almost all the online action, 9% contribute to some degree (Nielsen, 2006) and the majority are inactive, passive readers (Jones *et al.*, 2004; Kozinets, 1999; Nonnecke, 2000). The literature distinguishes in this context between "lurkers" and "posters". Yeow *et al.*, (2006) define lurking as "persistent peripheral participation". That is, lurkers read social media data, but do not directly contribute (Muller, 2012a) and prefer passive attention over active participation (Rafaeli *et al.*, 2004). Lee *et al.*, (2006) proposed a different view about lurking claiming that their seemingly silent participation conveys an even deeper engagement than that of the non-lurkers.

Contrarily, posters are active members in online discussions who are generally regarded as more constructive members of online communities and considered essential for sustaining the online community as a dynamic social group. Therefore, persistent lack of involvement among lurkers could endanger the continuity of the online community (Yeow *et al.*, 2006) "as some active participants may be disheartened to continue with the discussion when they fail to get any feedback, verbal or non-verbal, from others" (Ping and Chee, 2009, 58). Lurking could also undermine the legitimacy of the online discussion in some settings such as e-democracy forums, where broad participation is considered essential to the legitimacy of the

discussions taken within the forum and of the conclusions it might generate (Perez, 2013). Hence, understanding lurking is central to the study of socialization in online social behavior, especially as lurkers have opinions, ideas, and information that can be of value to the online and offline community (Edelman, 2013). The phenomenon of lurking as an aspect of online behavior is also important because prior research has found that online participation enhances social well-being (van Uden-Kraan, *et al.*, 2008), has a positive influence on social self-esteem, and reduces the levels of stress and depression (Herrero, *et al.*, 2004). Therefore, lurkers should be encouraged to participate more actively in online discussions. For this reason, it is important to understand the factors behind active participation in online social platforms. This article aims to improve our understanding of participation and the factors underlying it. It focuses on the relationship between the following factors of participation in online social platforms: anonymity, social value orientation, motivations, and participation in offline activities, as well as the Internet's political influence and personal traits, as explained in the Methodology section.

Literature review

Several studies have investigated the factors involved in online participation. In an early study Nonnecke and Preece (2001) interviewed 10 members of online social platforms and found 79 personal, group's characteristics and work related reasons for lurking and seven lurkers' needs were identified and categorized into a gratification model that explained lurker behavior. The gratification model proposed explained why lurking is a way of satisfying a variety of the lurkers' wants/needs. In a later study Preece *et al.*, (2004) administered a survey containing both coded and open-ended questions to 375 online communities randomly selected. They observed five main reasons for lurking: (1) not needing to post; (2) needing to find out more about the group before participating; (3) thinking that they were being helpful

by not posting; (4) not being able to make the software work (i.e., poor usability); (5) not liking the group dynamics or the community was a poor fit for them. Muller (2012a) analyzed statistical patterns of contributions and lurking data on IBM's enterprise online community services that provided a different explanation for online participation. He claimed that each person's actions (i.e., lurking, contributing, or a combination) are driven in part by the person's overall traits, but are strongly modified by the person's attitude or disposition toward a topic, a group of colleagues, and/or individual or shared tasks. Muller (2012a) further stated that the nature of each type of community (team, community of practice, etc.) and the role of each member within those teams and communities is crucial in determining the degree and type of contribution to be made. Other studies have found that online participation and collaboration can often be impeded by group processes, including coercion by the majority (Kucuk, 2010); that the dynamics in online social platforms such as information overload can impact online participation (Haythornthwaite, 2009) causing users to read less and thus acquiring less social capital, and having less in common with other users (Rafaeli *et al.*, 2004).

The current study examines online participation from a more holistic perspective and focuses on six different factors. The effect that anonymity might have on online participation is the first factor investigated in this study. Anonymity is defined by Marx (1999) as a state where a person is not identifiable. Suler (2004) stated that the anonymous and textual nature of the Internet allows people to separate their actions online from their identity in real life, thus they feel less vulnerable about expressing themselves freely on issues such as gender, ethnicity or religion and they are able to overcome identity personal flaws or disabilities (Papacharissi, 2002). Amichai-Hamburger and Hayat (2013) suggested that online anonymity creates the potential for empowering the individual that are likely to lead people to be more honest and expressive than they would be in an online environment in which they are

identified. Other studies using quantitative surveys to examine a product rating forums (Helm, *et al.*, 2013) and participant observation to understand participation in a weight-loss forum (Das and Faxvaag, 2014) concluded that users become lurkers for fear of personal disclosure and that lack of anonymity had a negative effect on users.

The second factor examined the element of social value orientation. The measure of social value orientation (SVO) seeks to measure people's "stable preferences for certain patterns of outcomes for oneself and others" (Van Lange, *et al.*, 1997, p. 733). The measure used in this paper draws on the work of Van Lange (Van Lange *et al.*, 1997). It distinguishes between three categories of social value orientations: prosocial, individualistic, and competitive orientations. *Prosocials* tend to maximize outcomes for both themselves and others (reflecting a cooperative disposition); *individualists* tend to maximize their own outcomes with little or no regard for others' outcomes; and *competitors* tend to maximize their own outcomes relative to others' outcomes, seeking relative advantage over others. The three social value orientations are predictive of behavior in a variety of social dilemma tasks, with prosocials exhibiting clear tendencies toward cooperation (unless others fail to reciprocate), and individualists and competitors exhibiting tendencies toward maximizing their own and relative gain, even when interdependent others evidence high levels of cooperation. Moreover, social value orientations are predictive of helping behavior, decisions and judgments regarding commuting choices, willingness to sacrifice in close relationships, decisions over energy conservation in different energy consumption domains (Sütterlin, *et al.*, 2013).

The third factor examined were the motivations behind participation in online social platforms. Motivations have been described as "a directing force over behavior and that motivation can act to begin the behavior as well as influence its continuation" (Brady, 2006, p. 4). The motivations to use and interact with different types of media have been studied in the

past for different types of media (Eighmey and McCord, 1998; Funk and Buchman, 1996; Huang, 2007; Rubin, 1981). A number of recent studies that have examined users' motivations to participate in online social platforms have found that the motivations to participate in Facebook groups engaged in humanitarian activities were mostly emotional, informational, social performative, cost related liking and routine liking (Brandtzaeg and Haugstveit, 2014). Patients undergoing weight-loss surgery were motivated to participate in an online forum for two main reasons: (1) informational support and guidance about the surgery, aftercare and the following dietary management; (2) social support and networking among peers (Das and Faxvaag, 2014).

The fourth factor examined is the impact that participation in offline activities might have on online participation. Two studies using confirmatory factor analysis have indicated that people's offline and online civic activities are correlated (Calenda, and Mosca, 2007; Hirzalla, 2007). Hirzalla and van Zoonenthe (2011), investigated whether young people's modes of civic participation change in online and offline civic activities and found that patterns of youth participation are relatively independent of mode (offline vs. online) and that online activities are not necessarily more popular than offline activities. In contrast, Gibson and Cantijoch (2013) claimed that online and offline activities form distinctive practices. They explain that, "just because one can more easily move from signing an e-petition to contacting a politician or volunteering to help a party, this does not lead to these practices merging together and constituting a unidimensional scale of activity." (p. 714). Because of these contradictory findings we decided to further investigate the relationship between online and offline activities.

The fifth factor examines the Internet's political influence (The World Internet Project, 2009) that is, how far the individual believes that the Internet enhances his/her political power. In recent years, the Internet and social media have served as political platforms for

diverse groups of people. A Pew Internet survey (Smith, 2013) found that in 2012, 39% of American adults took part in some sort of political activity in the context of a social networking site such as Facebook or Twitter. Prior studies using quantitative surveys and qualitative content analysis of Facebook posts have investigated the role that social networks have played as a source for political information have focused on the effects of Facebook on civic engagement and political participation (Andersen and Medaglia, 2009; Gil de Zuñiga, *et al.*, 2012). Social networks provide deliberative space to discuss and encourage political participation, (Halpern and Gibbs, 2013) and people who use the Internet and social media are more likely to engage in politics (Al-Kandari and Hasanen, 2012). Other studies have examined the creation and exchange of user-generated content that has been identified as key to the rise of social protests around the world (Jones, 2011; Madrigal and Schreiber, 2011; Rhue, and Sundararajan, 2014). Tang and Huhe (2014) run a posttest-only randomized experiment and asserted that the Internet can foster the development of civil society by pluralising the flow of information, allowing a wider and more public deliberation, and promoting alternative political discourse.

The last factor examined relates to the personal traits of the user. Past studies using quantitative personality surveys and online discussion notes shown that personality traits of an individual are highly influential in determining online behavior (Amichai-Hamburger *et al.*, 2002; Amichai-Hamburger, 2005; Nussbaum, *et al.*, 2004). The "Big Five" model (Costa and McCrae, 1992), one of the most well-researched measures of personality structure in recent years (Golbeck, *et al.*, 2011), was used as a theoretical framework for this phase of the study. The model consists of five factors that represent personality traits: (1) extroversion characterized by sociability, energy, and talkativeness, (2) neuroticism characterized by anxiety, moodiness, and emotional instability, (3) openness representing creativity, intellectualism, and preference for novelty to experiences, (4) agreeableness involving

warmth, cooperativeness, and helpfulness and (5) conscientiousness reflected in discipline, responsibility, and orderliness (Seidman, 2013). Recent studies have investigated the five factors as predictors of social media use and found them relevant (Aharony, 2013; Ross, *et al.*, 2009; Selfhout, *et al.*, 2010; Wehrli, 2008). Amichai-Hamburger and Vinitzky (2010) were the first to find a relationship between Facebook use and personality. They analyzed activity on Facebook, and found that personality is especially relevant to the understanding of people's behavior on SNS. For example they found that, extroverts are usually more active in actual social interactions. Gosling *et al.* (2011) administered a survey containing the Big 5 questionnaire and a series of questions about Facebook-related behaviors posited that consistent with socialization in offline contexts, extraverts seek out virtual social contact and participate more actively in online social environments than introverts. Wang, *et al.*, (2012) use self-reported measures to measure Facebook behaviors and found that people with different personality traits use different features of social networking sites. For example, extravert and agreeable persons tend to make more comments on others' profiles; neurotics tend to update their status as a way of self-expression and narcissistic users were more likely to upload their attractive photos on social networking sites. Ross *et al.* (2009) reported that extroverts were found to belong to significantly more Facebook groups and they used these groups to maintain their social ties while users with a high level of openness were more willing to consider alternative methods of communication, and were more likely to use Facebook tools such as commenting and walls. It should be noted that at least within the political sphere there is reason to believe that lurking is not is a permanent personality trait (Muller, 2012b; Preece, *et al.*, 2004). While people may differ in their political assertiveness, we all share a latent political capacity. Political activity at the individual level is likely, therefore, to be characterized by long periods of a relatively low level of engagement that are punctuated by short bursts of more intense political activity (Perez, 2013).

The studies reviewed in this chapter used qualitative and quantitative research methods to understand and explain different factors influencing online participation in social platforms. To the best of our knowledge, these factors have not been studied together, as we do here. Our aim in combining several factors is to gain a more holistic understanding of what influences online participation on social platforms.

Method

The variables examined in this study were based on prior research and on the outcomes of focus groups that were conducted in a preliminary phase of the study, as detailed in the Tools and Measures section. The following research questions reflect what we learned in this preliminary phase:

1. How does anonymity relate to the level of online participation?
2. How does social value orientation relate to the level of online participation?
3. Which motivations are in relationship with the level of online participation?
4. What is the relationship between personal traits and the level of online participation?
5. How does the perception of the Internet's impact as a political platform relate to the level of online participation?
6. What is the relationship between personal traits and the level of online participation?

Data collection

The research was conducted in Israel in the summer of 2014. An online questionnaire was administered by a survey company having a representative sample of Israeli Internet users. This company has the largest panel of Hebrew speaking online subjects in Israel with more than 100,000 panel members, who receive coupons for participating in surveys. A pilot of 50 subjects took place with an additional space for the subjects to share their opinion on

the survey. Only one respondent wrote that answering the survey was an interesting experience, while the rest did not have any comments. The different sections of the survey were statistically analyzed and were found reliable. Then, 661 Internet users between the ages 20 and 40 were randomly selected to participate in the study from a pool of tens of thousands of panel members. The age limitation was decided parting from the premise that these are the ages during which people are more active politically online. Out of the 661 participants, 507 were selected based on their answer to a question at the beginning of the questionnaire that asked participants to rate the frequency with which they read and online social platforms on the Internet (Appendix A, section 1). This question helped us exclude participants who reported infrequent access by answering "never" or "once or twice a year". The 507 respondents that reported a frequency of at least once a week or more were finally selected as our sample, and all of them completed the entire questionnaire. Of the 507 participants that completed the questionnaire, 237 (46.7%) were male and 270 (53.3%) were female. The mean as well as the median age, was 28, while the mode was 29. 266 (52.5%) had an academic degree (B.A/B.Sc and above), 237 (46.7%) did not have an academic degree and 4 (0.8%) did not answer the question.

Tools and Measures

Before composing the questions for the survey, we held four focus groups with 23 subjects overall: two groups of lurkers and two groups of active participants. This was an exploratory phase that aimed to help us reach a better understanding of the motivations to participate or to avoid participation in online social platforms. We also heard some interesting ideas about anonymity, offline activity and the Internet as a political tool. From the general impressions from these groups we created categories and used them as a general guideline for some of the motivational questions.

After answering the filtering question participants were asked to complete a questionnaire that included 102 questions, divided into nine sections (2) Social Value Orientation scale (SVO), (Appendix A, section 2), (3) Online social platforms (Appendix, section 3), (4) Level of participation (LP) (Appendix A, section 4), (5) motivations to participate (MP) in an online social platform (Appendix A, section 5), (6) the level of activity outside of the Internet (LAO) (Appendix A, section 6), (7) Anonymity (Appendix, section 7), (8) Internet political influence scale (Appendix A, section 8) (9) BIG5 scale (Appendix, section 9) and (10) demographic questions (Appendix A, section 10),

1. Social value orientation section: We used Van Lange, et al., (1997, 746) questionnaire to measure social value orientation (SVO). Participants are classified in a given class when they made 6 or more consistent choices out of the 9 questions presented to them. *Prosocials* are those that chose options that maximize *joint* outcomes for both themselves and others; *individualists* chose options that maximize their *own* outcomes; *competitors* chose options that maximize the *difference* between their own outcomes and others (Appendix A, section 1).

2. Online social platforms: This section included the following questions:

a. Frequently accessed sites: participants were asked to choose the type of the online social platform they visited most frequently: 1) comments on news sites; 2) Facebook groups; 3) forums; 4) Review sites (like Tripadvisor); 5) WhatsApp groups; 6) other, and were requested to name the specific discussion site Group's characteristics.

b. Group's characteristics: participants were asked whether they disclose their identity or remain anonymous in the specific discussion site they named above and whether the site dealt with political/public issues (Appendix A, section 3).

3. Level of participation (LP): participants were asked how often do they comment, share, provide content from external sources or create content in social online platforms, from 1

(never) to 6 (few times a day). The Chronbach's Alpha of these three items was .89, and the score was calculated as the mean of the three items, into the dependent variable: Level of Participation (Appendix A, section 4).

4. Motivations to participate in online social platforms (MP): 17 phrases that repeated themselves in the focus groups and combined well with the literature mentioned above were gathered into this section. All phrases were rated on a 6 - point Likert scale (1 = strongest disagreement; 6 = strongest agreement). The Chronbach's Alpha was .90 after deleting item 12 ("Visiting the group/ platform helps pass the time"), which didn't fit the rest of the items. Thus we created the variable Motivation as the mean of the 16 items. Further, according to a factor analysis, we were able to partition the 16 items into three coherent groups.

1) *Personal motivations*: motivations that focus on personal interests. Contain phrases such as "My content usually gets positive reactions" or " it is important for me to share what I feel" (items 5,6,7,8,9,10. $\alpha=.88$). 2) *Social motivations*: motivations that focus on the benefit of the group. Contains phrases such as "because my activity contributes to the group/platform" or "because the group/platform enables me to meet new people" (items 3,13,14,15,16,17 $\alpha=.81$). 3) *Efficacy motivations*: motivations that focus on gaining something from the group. Contains phrases such as "because my participation in the group has influence" or "because the group allows me to obtain information" (items 1,2,4,11,17. $\alpha=.64$). The items in each group were combined and the mean of the participants' rating was calculated for the items in each group into three independent variables: personal motivations, social motivations and efficacy motivations. (Appendix A, section 5).

5. The level of activity outside the Internet questionnaire (LAO): four ideas that repeated themselves in the focus groups and were supported by the literature were gathered into this section. These ideas turned into items, rated on a 6 - point frequency scale (1 = never; 6 = very often), that asked about respondents' frequency of activity offline (e.g. "I am active in

protest groups outside the Internet"; "I am participating in voluntary activities outside the Internet"). The Cronbach's Alpha was .66, and the score was calculated as the mean of the four items, into the independent variable: offline activity (Appendix A, section 6). The Cronbach alpha for parts 5 and 6 are a bit low, but still acceptable (Murphy and Davidshofer (1988), cited in Peterson, 1994).

6. Anonymity: Nine phrases that repeated themselves in the focus groups were gathered into this section. All phrases were rated on a 6 - point Likert scale (1 = strongest disagreement; 6 = strongest agreement). Some of the phrases were about the benefits of an anonymity environment, for example "Sites on which the anonymity of the participants is guaranteed make me participate more" (items 3,4,5,6,8), and some about the benefits of an identified environment, for example "I ascribe greater credibility to the comments of people who identify themselves by name" (items 1,2,7,9). After reversing items 1,2,7,9, the Cronbach's Alpha was .52 which was too low and thus, we have decided not to use this section in our statistical analysis (Appendix A, section 7).

7. Internet political influence: this section was added after this subject was mentioned by the participants of the focus groups. The four questions are based on the questions asked by the World Internet Project on the belief that the Internet enhances the respondent's political power (The World Internet Project, 2009). Participants were asked whether by using the Internet they could: gain political power and a better understanding of politics, influence governmental action and influence public representatives into caring more about people's opinions. (Appendix A, section 8). The Cronbach's Alpha of this section was .88.

8. BIG5 scale: contained the Hebrew version (Etzion and Laski, 1998) of the Big 5 personality questionnaire (McCrae and John, 1992) that includes 44 items examining five different personality characteristics: extroversion, neuroticism, agreeableness, conscientiousness, and openness to experience. The value of Cronbach's Alpha (after

reversing items 2, 6, 8, 9, 12, 18, 21, 23, 24, 27, 31, 34, 35, 37, 41, 43) were: Extroversion ($\alpha=.76$), Neuroticism ($\alpha=.81$), Agreeableness ($\alpha=.74$), Conscientiousness ($\alpha=.74$), and Openness to experience ($\alpha=.73$). (Appendix A, section 9)

9. Demographic questions included the following variables: age, gender, education, where they live, socio-economic status, level of religiousness, political stand and level of political involvement (Appendix A, section 10).

Results

First we describe each factor individually and then the correlations between them and finally the individual factors are combined in a regression analysis.

SVO

The distribution of the four different SVO types was similar to what was observed in previous studies (Van Lange, *et al.*, 2011) (Van Lange et al. 2012). 44% were classified as prosocials, 31% as individualists, and 10% as competitors, 14.2% failed to fulfill the classification criteria. A MANOVA was performed in order to examine differences between the four types. No significant difference was found between the SVO types concerning the dependent variable: the level of online participation, as well as the independent variables: none of the BIG5 characteristics or the motivations for participation in a discussion (*ns*). We also examined whether there was a difference in offline activity level and the belief in the Internet as a political influence. A significant difference was found between SVO types in offline activity level ($F_{(3,503)}=3.414, p< .05, \eta^2=.02$). Prosocial types ($M=2.98, SD=0.07$), reported higher levels of offline activity than that of competitive types ($M=2.61, SD=0.14$). A significant difference was also found between the SVO types concerning the belief in the

Internet as a political influence ($F_{(3,503)}=2.647, p< .05, \eta^2=.016$). Similar to the offline activity, here as well, the prosocial types ($M=3.80, SD = 0.09$) are higher than the competitive types ($M=3.30, SD=0.19$).

Online Platforms

Frequently accessed sites: participants were asked to choose the type of the online platform they visited most frequently. The majority chose Facebook ($n = 180$), followed by talkbacks of news sites ($n = 138$), WhatsApp ($n = 90$), Forums ($n = 65$) and others ($n = 34$). In order to examine the differences between the levels of participation by types of online social platforms, a one-way ANOVA was performed. A significant difference was found ($F_{(5,501)}=40.087, p <.001, \eta^2 =.29$). The participation level in the WhatsApp group was significantly higher ($M = 4.64, SD = 1.14$) than in the other types of groups. In the Facebook groups the mean of participation was $M=2.99$, in the forums the mean was $M = 2.95$ and in the talkbacks of news sites the mean was the lowest: $M = 2.26$. Recall that the participation level was on a scale of 1 to 6. Because of this finding, and because WhatsApp is a unique platform, that was based on cellular use only at the time the survey was conducted, that contains mostly small intimate groups, we have divided the group types into two values: WhatsApp groups vs. all other groups, naming this independent variable Preferred Discussion Platform (PDP).

Anonymity

When asked whether they are presented with their full identity or not in the online discussion group, 69% of the sample answered "yes", while 31% answered "no", meaning they are presented as anonymous users. In order to examine the possible impact that anonymity or disclosure of identity could have on the participation level of participants a one-way ANOVA was performed. A significant difference was found between anonymous groups and non-anonymous groups in the level of participation ($F_{(1,505)}=45.98, p <.001, \eta^2 =.08$). The level of

participation was significantly higher for those who disclosed their identity ($M = 3.34$, $SD = 1.51$) than those who did not ($M = 2.41$, $SD = 1.25$). We find it important to mention that there was a strong and significant relationship between the anonymity (yes/no) and the group type ($\chi^2 = 219.77$, $C = .658$, $p < .001$), so that most of the Facebook (96.1%) and Whatsapp (98.9%) groups' users stated that they use their full names, whereas most of the forum (66.2%) and talkback (65.9%) groups' users reported that they did not disclose their full identity in the discussion. These findings show that anonymity needs are clearly platform dependent .

The level of activity outside the Internet (LAO), Internet political influence and the BIG5 questionnaire

While the scale of the questionnaires was 1 to 6, the mean of LAO was 2.83 ($SD = 1.00$) and the mean of the belief in the Internet political influence was 3.70 ($SD = 1.36$). The means and Standard deviations of the Big 5 characteristics were: Extraversion: 3.87 ($SD = 0.80$); Openness: 4.02 ($SD = 0.75$); Neuroticism: 2.96 ($SD = 0.90$); Agreeableness: 4.50 ($SD = 0.73$); Conscientiousness: 4.57 ($SD = 0.71$).

Correlations between the variables

Pearson correlations were performed to examine the relationship between the BIG 5 traits, the activity outside the Internet (LAO), the belief in the Internet as having political influence, the personal motivations to participate in a discussion, the social motivations to participate in a discussion, the efficacy motivations to participate in a discussion, and the dependent variable of participation in a group discussion (see Table 1).

Insert Table 1 here

Table 1 shows that significant positive correlations were found between participation level and most of the independent variables, mainly the different motivations to participate, followed by openness, the level of activity, offline activity and extraversion. Significant and positive correlations were also found between openness and extroversion and all other variables, and between the level of offline activity and other variables, like participation level, extraversion, openness and the motivations for participation.

Regression

We conducted a hierarchical regression using level of participation as a dependent variable.

The predictors were entered in six steps:

- (1) Personality characteristics: extraversion and openness
- (2) Offline activity (Offline Activity)
- (3) Disclosure of identity or anonymity and the Preferred Discussion Platform being used (PDP).
- (4) Level of belief in the Internet as a political influence (Political)
- (5) Motivational parameters to participation: personal, social and efficacy.
- (6) Contribution of interactions between all predictors to the explained variance of level of participation.

In the regression analysis, the entrance of the first five steps was forced, while that of the interactions was done according to their contribution to the explained variance of level of participation. The regression analysis shows that there was not any significant contribution of the interactions to the explained variance of the level of participation, thus, Table 2 presents

only the first five steps. The regression explained 59% of the variance in the level of participation. Table 2 presents the standardized and unstandardized coefficients of the hierarchical regression of respondents' level of participation in a discussion.

Insert Table 2 here

The examination of the first step reveals that the two personality characteristics openness and extraversion contributed significantly to the explained variance of the level of participation by contributing 11%, so that the more open and extravert participants are, the more they will participate in a group discussion in the Internet. The second step introduced the level of offline activity that contributed significantly by adding 3% to the explained variance of the level of participation, so that the more active participants are outside the Internet, the more they will participate in a group discussion inside the Internet.

The third step introduced the preferred discussion platform and the anonymity variables that contributed significantly by adding 22% to the explained variance of the level of participation. The beta coefficient of the PDP was positive, indicating that when participants are using the WhatsApp platform for group discussions, they will participate more than the ones who use other group platforms, like Facebook, forums or commenting on websites. The beta coefficient of the anonymity was negative, indicating that when subjects are anonymous, they will participate less than the ones who identify themselves.

The fourth step introduced the level of belief in the Internet having political influence that did not contribute significantly to the explained variance of level of participation. The fifth step contained three variables associated with the motivations people have in participating in an

online discussion: personal, social and efficacy. The personal and social motivations contributed significantly by adding 22% to the explained variance of the level of participation. The inclusion of this step caused a decrease in the β size of the openness, the offline activity and anonymity, indicating that these variables may be mediated by the motivations. In addition, the fact that the efficacy motivation is not significant may indicate of an overlap between the motivations, as the correlations between them are significant and strong ($r = .63-.70, p < .001$).

The Sobel test, that examines mediators, indicated that motivations mediated between openness and the level of participation ($z = 7.78, p < .001$) (see Figure 1). Hence, the more respondents are open to new ideas, the more motivated they are to participate in an online discussion and they actually participate more. (See Figure 1)

Insert Figure 1 here

The Sobel test also indicated that motivations mediated between the offline activity and the level of participation ($z = 6.76, p < .001$). Hence, the more respondents are active outside the Internet, the more motivated they are to participate in an online discussion and they actually participate more (see Figure 2).

Insert Figure 2 here

In addition, the Sobel test indicated that the motivations mediated between the lack of anonymity and the level of participation ($z = -7.01, p <.001$). Hence, when respondents identify themselves in the online discussion, they are more motivated to participate and they actually participate more (see Figure 3).

Insert Figure 3 here

Discussion

The present study examined the relationship between different factors involved in participation in online social platforms. The first research question examined the relation between anonymity and the level of online participation. A significant difference was found between anonymous groups and non-anonymous groups in the level of participation that was significantly higher for those who disclose their identity. This is an interesting finding since prior studies have shown that while the concealment of identity had a positive effect on the participation of users (Bronstein, 2013; Helm *et al*, 2013; Nonnecke, 2000) the forced disclosure of their identity brought many users to become lurkers for the fear of disclosing personal information and opinions (Das and Faxvaag, 2014). Halpern and Gibbs's (2013) study supported our findings and explained that in non-anonymous social networks such as Facebook, participation increases because users are exposed to content posted by their contacts, they may engage more with their contacts with whom they share common interests which in turn "may create a catalytic reaction by facilitating political discussion among groups of friends or at least people who know others' friends, triggering more common topics and expanding the debate." (p. 1166).

The second research question examined the potential impact of differences in social value orientation on level of online participation. Although significant differences between the types of social orientation were found in reported levels of offline activities and for the belief in the Internet as a political influence, no significant difference was found for the variable participation in online social platforms. One possible explanation may be that our study brought together a variety of online social platforms with different characteristics in which the individual type could have different impacts. We believe that this question justifies further study that will focus on a single forum.

The third research question examined the motivations and their correlation with the level of online participation. Findings show that in this study motivations mediated between openness, offline activity, the lack of anonymity and the level of participation. Hence, respondents who were motivated to participate are open to new ideas; participate more actively in offline activities and identify themselves. These findings support prior research that has identified motivations as significant factors in participation in online social platforms. These past studies asserted that people were motivated to participate in online social platforms for social support and networking reasons (Brandtzaeg and Haugstveit, 2014), and for health management reasons (Das and Faxvaag, 2014; Han *et al.*, 2014).

The fourth research question examined whether the level of activity outside the Internet relates to the level of online participation. Findings show that the level of offline activity was in a significant medium strength correlation ($r=.304$) with level of participation, so that the more active participants are outside the Internet, the more they will participate in a group discussion on the Internet. This finding contradicts prior studies that found no correlation between offline and online activities (Hirzalla and van Zoonenthe, 2011) that are intrinsically different in nature and cannot always be measured on one scale of activity (Gibson and Cantijoch, 2013).

The fifth research question asked in what way does the perception of the Internet's impact as a political platform correlate with the level of online participation. The analysis of the data shows that the Internet's political influence, did not contribute significantly to the explained variance of level of participation. This finding supports prior studies that found people were less susceptible to the political opinions they encountered on social networks (Bronstein and Aharony, 2015) since they did not use these networks for political purposes but encountered political information by chance (Hanson et al., 2010).

The sixth research question examined the relationship between personality traits and the level of online participation. Findings show significant correlations between two personal traits, openness and extraversion and level of participation. These findings support prior research that has found the five factors as predictors of social media use (Aharony, 2013; Selfhout *et al.*, 2010). Echoing other studies, participants who were extrovert possessed higher levels of online socialization (Gosling et al, 2011) and expressed their opinions more frequently (Helm et al., 2013); while users with a high level of openness, were more receptive of new methods of communication, therefore they were more likely to use innovative features of online social platforms such as Facebook's walls.

The study has a number of limitations. First, the study compares different platforms and not levels of participation in anonymity and disclosure across the same platform. Second, participants were asked to report about their participation in online social platforms and as in any other research based on self-reported behaviors, the perceptions people have of their own behavior may differ from their actual behavior. Therefore, accuracy is difficult to verify. Unlike other studies where researchers have personally observed relevant behavior, no external validation was conducted for this study.

Conclusion

This study aimed to understand the different factors explaining participation in online social platforms and it presents a number of interesting findings that extend the literature on the subject. Findings from this study present a somewhat different picture of participation in online groups than that was demonstrated in prior research. Two distinct behaviors could be observed depending on whether participants in online social platforms identified themselves or retained some level of anonymity. This is in line with Amichai-Hamburger, *et al's* (2008) assertion that the Internet has split into two environments, one in which people are identified and a second one where people can be anonymous. These two environments serve different needs. The identified environment tends to be exploited for existing social contacts, while the anonymous environment is more for identity exploration and enables people to express themselves more freely. This study shows that participants who identify themselves showed higher levels of participation, extraversion and openness and were more actively engaged in offline activities. These findings could be explained by the fact that this study examined a general population that participated in a variety of online social platforms and groups resulting in a somewhat different picture of online participation compared the ones presented in the literature on the subject. We would like to suggest that the factors explaining participation in online social platforms are not only related to personality traits, but are also impacted by interest and disposition towards the specific topic, or the type or nature of the social group with whom they are communicating and most importantly by the nature of the motivations that drive them to participate in the particular forum or group.

Further research

Future research should investigate the role that the technological platform used might have on online participation, by researching the use of innovative features in existing platforms as well as new sites that might become popular in the future. Focusing on the level of participation in different types of groups, depending, for example, on whether participants

identify themselves or retain some level of anonymity. In addition, the mediating role of motivations should be further investigated while taking into account different populations, topics of interest that could be studied by implementing different qualitative methodologies such as in-depth interviews or narrative that will provide different types of data extending the existing knowledge on the participation in online social platforms.

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Appendix A – Survey

1. **Filtering question**

The following question refers to your Internet activities in various groups and platforms.

Internet discussions include all types of dialog conducted on the Web. Internet discussions can take place in various groups and platforms such as forums, talkbacks on news sites, groups or topic pages on Facebook or other social networks, and discussion groups on public sharing sites, on the sites of local authorities, and on private sites.

What is the frequency of your activities	Never	Once in two months	Once in two weeks	Several times a week	Once or twice a day	Several times a day
I read content posted by others in discussions conducted in Internet groups/platforms	1	2	3	4	5	6

2. **SVO**

In this task we ask you to imagine that you have been randomly paired with another person, whom we will simply refer to as "Other". This other person is someone you do not know and will not knowingly meet in the future. Both you and the "Other" will be making choices by choosing between A, B and C. Your own choices will produce points for both yourself and the "Other" person. Likewise, the other's choice will produce points for him/her and for you. Every point has value: The more points you receive the better for you, the more points the "Other" receives the better for him/her. Here's an example of how this works:

Points	A	B	C
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You get	500	500	550
Other gets	100	500	300

In this example if you chose A you would receive 500 points and the other would receive 100 points; if you chose B you would receive 500 points and the other 500; and if you choose C, you would receive 550 points and the other 300.

Before you begin making choices, please keep in mind, there are no right or wrong answers – choose the option that you for whatever reason prefer most. Also remember that the points have value: The more of them you accumulate, the better for you. Likewise, from the “other’s” point of view, the more points s/he accumulates, the better for him/her.

In the following nine questions please chose for each question the preferred option, A, B or C.

Points	A	B	C
1. You get	480	540	480
Other gets	80	280	480
2. You get	560	500	500
Other gets	300	500	100
3. You get	520	520	580
Other gets	520	120	320
4. You get	500	560	490
Other gets	100	300	490
5. You get	560	500	490
Other gets	300	500	90
6. You get	500	500	570
Other gets	500	100	300
7. You get	510	560	510
Other gets	510	300	110
8. You get	550	500	500
Other gets	300	100	500
9. You get	480	490	540
Other gets	100	490	300

3. Social online platform

Please think of the discussion group/platform in which you participate most often, and **choose only one option below**. After choosing, please enter the name of the group/platform:

- Talkbacks on news sites _____
- Facebook groups _____
- Forums _____
- Review/recommendation sites (such as Zap or Tripadvisor) _____
- WhatsApp groups (excluding the “Family group”) _____
- Other _____

Are you using your real name in this group/forum? Yes / No

Does this group/forum deal with public/political activities? Yes/No

4. Level of participation (LP)

Answer the following questions and choose the most appropriate option for you strictly with respect to the group/platform you had selected:

What is the frequency of your activities	Never	Once in two months	Once in two weeks	Several times a week	Once or twice a day	Several times a day
I respond to content posted by others	1	2	3	4	5	6
I share with the group content from other sources	1	2	3	4	5	6
I create new content (text, images, videos, etc.)	1	2	3	4	5	6

5. The motivations to participate (MP)

Answer the following questions with reference to the following definitions:
Active: Responds to content and/or shares content and or uploads content
Inactive: Only browses and reads

Please answer the following questions strictly **with respect to the group/platform you had selected: to what extent is your activity or inactivity the result of the following reasons:**

To what extent is your activity or inactivity the result of the following reasons:	Strongly disagree					Strongly agree
1. Being active is a waste of time	1	2	3	4	5	6
2. My activity has influence	1	2	3	4	5	6
3. My activity contributes to the group/platform	1	2	3	4	5	6
4. I derive a benefit from the group/platform	1	2	3	4	5	6
5. My content usually gets positive reactions	1	2	3	4	5	6
6. The group/platform allows expressing opinions freely and equitably	1	2	3	4	5	6
7. It is important for me to express what I think	1	2	3	4	5	6
8. It is important for me to share what I feel	1	2	3	4	5	6
9. Others' reactions to what I think and feel are important to me	1	2	3	4	5	6
10. The availability and accessibility of the group/ platform make it easy for me to participate	1	2	3	4	5	6
11. The group/platform allows me to obtain information	1	2	3	4	5	6
12. Visiting the group/ platform helps pass the time	1	2	3	4	5	6

13. The group/platform enables me to meet new people	1	2	3	4	5	6
14. The group/platform enables me to feel part of the community	1	2	3	4	5	6
15. I have personal relationships with members of the group	1	2	3	4	5	6
16. I sympathize with the goals of the group	1	2	3	4	5	6
17. Someone else said what I had in mind	1	2	3	4	5	6

6. The level of activity outside of the Internet (LAO)

What is the frequency of your activities away from the Internet	Never					Very often
1. I express my opinions to people outside the Internet	1	2	3	4	5	6
2. I am active in protest groups outside the Internet	1	2	3	4	5	6
3. I am engaged in social activities (e.g., parents' committee, student council, neighborhood council)	1	2	3	4	5	6
4. I am volunteering (e.g., help the aged, assist the poor)	1	2	3	4	5	6

7. Anonymity

The following questions refer to your general opinions about groups/platforms on which discussions take place, irrespective of any specific group

To what extent do you agree with the following statements	Strongly disagree					Strongly agree
1. I ascribe greater credibility to the comments of people who identify themselves by name	1	2	3	4	5	6

2. The comments of people who identify themselves by name have greater influence on decision makers	1	2	3	4	5	6
3. Sites on which the anonymity of the participants is guaranteed make me participate more	1	2	3	4	5	6
4. Anonymity makes me express my true and sincere opinion	1	2	3	4	5	6
5. In my opinion, an anonymous environment enables an in-depth discussion	1	2	3	4	5	6
6. I am active only in anonymous groups	1	2	3	4	5	6
7. In my opinion, an anonymous environment encourages aggressiveness and irresponsible opinions	1	2	3	4	5	6
8. In non-anonymous groups some of the participants may fear to express their true and sincere opinions	1	2	3	4	5	6
9. Anonymity makes me express myself cynically	1	2	3	4	5	6

8. Internet political influence

To what extent do you agree that by using the Internet...	Strongly disagree					Strongly agree
1. It is possible to accumulate political power	1	2	3	4	5	6
2. People can achieve greater influence over government action	1	2	3	4	5	6
3. People can reach a better understanding of politics	1	2	3	4	5	6

4. Public representatives will care more about people's opinions	1	2	3	4	5	6
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9. **BIG5 scale**

In the following table there is a list of human characteristics that can apply to you. Please chose the extent to which you agree with the following statements:

I see myself as someone who ...	Strongly disagree					Strongly agree
1. Is talkative	1	2	3	4	5	6
2. Tends to find fault with others	1	2	3	4	5	6
3. Does a thorough job	1	2	3	4	5	6
4. Is depressed, blue	1	2	3	4	5	6
5. Is original, comes up with new ideas	1	2	3	4	5	6
6. Is reserved	1	2	3	4	5	6
7. Is helpful and unselfish with others	1	2	3	4	5	6
8. Can be somewhat careless	1	2	3	4	5	6
9. Is relaxed, handles stress well	1	2	3	4	5	6
10. Is curious about many different things	1	2	3	4	5	6
11. Is full of energy	1	2	3	4	5	6
12. Starts quarrels with others	1	2	3	4	5	6
13. Is a reliable worker	1	2	3	4	5	6
14. Can be tense	1	2	3	4	5	6
15. Is ingenious, a deep thinker	1	2	3	4	5	6
16. Generates a lot of enthusiasm	1	2	3	4	5	6
17. Has a forgiving nature	1	2	3	4	5	6
18. Tends to be disorganized	1	2	3	4	5	6
19. Worries a lot	1	2	3	4	5	6
20. Has an active imagination	1	2	3	4	5	6
21. Tends to be quiet	1	2	3	4	5	6
22. Is generally trusting	1	2	3	4	5	6
23. Tends to be lazy	1	2	3	4	5	6
24. Is emotionally stable, not	1	2	3	4	5	6

easily upset						
25. Is inventive	1	2	3	4	5	6
26. Has an assertive personality	1	2	3	4	5	6
27. Can be cold and aloof	1	2	3	4	5	6
28. Perseveres until the task is finished	1	2	3	4	5	6
29. Can be moody	1	2	3	4	5	6
30. Values artistic, aesthetic experiences	1	2	3	4	5	6
31. Is sometimes shy, inhibited	1	2	3	4	5	6
32. Is considerate and kind to almost everyone	1	2	3	4	5	6
33. Does things efficiently	1	2	3	4	5	6
34. Remains calm in tense situations	1	2	3	4	5	6
35. Prefers work that is routine	1	2	3	4	5	6
36. Is outgoing, sociable	1	2	3	4	5	6
37. Is sometimes rude to others	1	2	3	4	5	6
38. Makes plans and follows through with them	1	2	3	4	5	6
39. Gets nervous easily	1	2	3	4	5	6
40. Likes to reflect, play with ideas	1	2	3	4	5	6
41. Has few artistic interests	1	2	3	4	5	6
42. Likes to cooperate with others	1	2	3	4	5	6
43. Is easily distracted	1	2	3	4	5	6
44. Is sophisticated in art, music or literature	1	2	3	4	5	6

10. Demographics

Finally, a few more general questions

What is your gender?

- [1] Male
- [2] Female

What is your age? _____

What is your area of residence?

- [1] Greater Jerusalem
- [2] Tel-Aviv and Dan region

- [3] Haifa and the north
- [4] South and the southern coast
- [5] Sharon region

What is your highest level of education?

1. Primary school or less
2. Secondary school without matriculation
3. Secondary school with matriculation
4. Beyond secondary school, but without a degree
5. Bachelor's degree
6. Master's degree or above
7. Refuse to answer

How do you define your economic standing?

1. Bad
2. Reasonable
3. Good
4. Very good
5. Excellent

How do you define yourself in terms of religion?

1. Secular
2. Traditional
3. Religious
4. Ultra-religious

Do you define yourself as "politically involved" (follow news, informed about major events)?

1. Not at all
2. A little
3. Rather involved
4. Involved
5. Very involved politically

Where do you place yourself on the political map?

1. Extreme left
2. Left
3. Moderate left
4. Center
5. Moderate right
6. Right
7. Extreme right

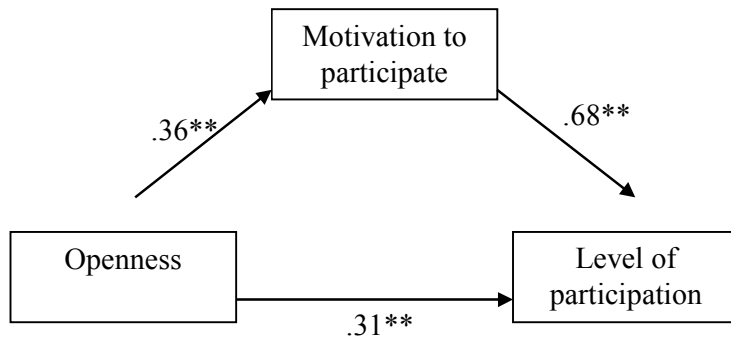


Figure 1: Correlation between openness and LP is moderated by Motivation

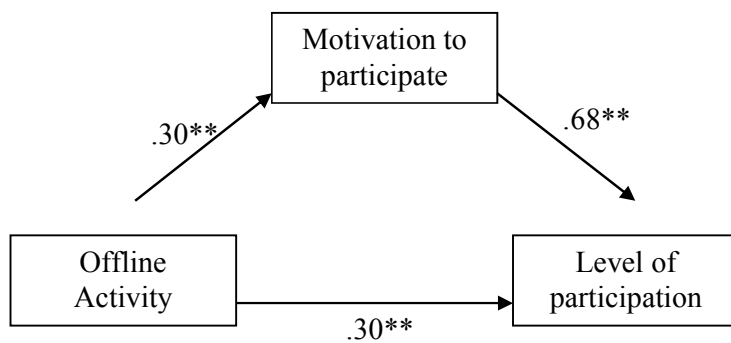


Figure 2: Correlation between Offline Activity and LP is moderated by the motivation.

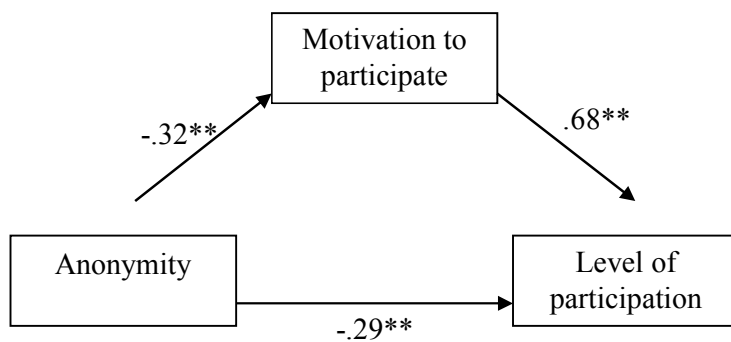


Figure 3: Correlation between Anonymity and LP is moderated by Motivation

Table 1:

Pearson correlations between the BIG5 personality traits, the level of offline activity, the belief in the Internet as a political influence, personal motivations, social motivations, efficacy motivations, and the dependent variable of participation in a group discussion ($n=507$)

	Openness	Neuroticism	Agreeableness	Conscientiousness	LAO	Political	Motivations			Participation
							Personal	Social	Efficacy	
Extraversion	.290**	-.163**	.118**	.305**	.360**	.097*	.224**	.153**	.138**	.205**
Openness		-.099	.181**	.189**	.296**	.224**	.388**	.287**	.239**	.308**
Neuroticism			-.452**	-.363**	-.065	.053	.029	.120**	.075	.010
Agreeableness				.469**	.011	-.014	.102*	.034	.135**	.003
Conscientiousness					.080	.051	.084	.047	.097*	.056
LAO						.188**	.301**	.283**	.236**	.304**
Political							.240**	.259**	.288**	.149**
Personal								.696**	.626**	.660**
Social									.663**	.633**
Efficacy										.488**

** $p < .001$ * $p < .05$

Table 2:

Hierarchical regression coefficients of respondents' level of participation in a discussion ($n = 507$).

Predictors	B	β	ΔR^2	R^2
1. Extraversion	.25	.14*	.11**	.11**
Openness	.51	.26**		
2. Offline Activity	.29	.19**	.03**	.14**
3. Preferred Discussion Platform	1.58	.41**	.22**	.36**
Anonymity	-.44	-.14**		

4. Political	.08	.07	.01	.37
5. Personal Motivation	.43	.36**	.22**	.59**
Social Motivation	.22	.19**		
Efficacy Motivation	.11	.07		

*p<.01, **p<.001