

# Digital Privacy and Social Capital on Social Network Sites. Friends or Foes?

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Previous<sup>1</sup> literature indicates that SNSs users, and especially Facebook ones, are willing to share information and consequently “sacrifice” their digital privacy in order to obtain bonding or bridging social capital. Additionally, most of the previous research has been administrated to young adults or college students in USA, disregarding the interactional dynamics of these concepts that result in users’ sharing on SNSs. This paper attempts to identify their correlation through an exploratory survey administrated to a Greek working adult population using Facebook in particular, while taking into consideration intermediary factors during their decision-making disclosure process. Findings show that perceived social capital has a greater impact on FB self-disclosure than privacy concerns, indicating that self-disclosure comprises an important factor to explore and interpret this relationship in order for further understanding of users’ behaviors on FB to be achieved.

CCS Concepts: • **Security and privacy~Social aspects of security and privacy**

General Terms: Privacy, Social Capital

Additional Key Words and Phrases: ACM proceedings, Word, text tagging Digital Privacy, Bonding Social Capital, Bridging Social Capital, Facebook, Self-disclosure behaviors

**ACM Reference format:**

Angeliki Kitsiou, Eleni Tzortzaki, Maria Sideri and Stefanos Gritzalis. 2016. Digital Privacy and Social Capital on Social Network Sites. Friends or Foes?. *STAST '16, December 05 2016, Los Angeles, CA, USA*, 14 pages.

DOI: 10.1145/3046055.3046060

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## 1 INTRODUCTION

Over the last years, Social Network Sites (SNSs) alternate the essence of privacy in digital and real life [1, 2], since they have shifted the social practices concerning communication and information broadcast [3], by providing users the opportunity to create personal webpages in order to contact with their friends or strangers and diffuse personal information [4]. Despite privacy risks, SNSs users are eager to reveal personal information [5] in order to gain benefits which derive from their participation in the SNSs [6, 7, 8].

Self-disclosure is a prerequisite condition in order for users to access information resources [9] that lead especially to the accruing of bonding and bridging social capital benefits [10]. Landry, Amara and Lamari [38] argue that the concept of social capital captures the gains and the advantages that individuals obtain by participating in networks and social institutions. Bonding social capital refers to the benefits that individuals acquire by their participation in solid social networks, experiencing similar situations. On the other hand, bridging social capital refers to the benefits that individuals acquire by their participation in weaker social networks when getting in touch with social groups with whom they do not share a common identity and by experiencing diverse situations [39].

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STAST '16, December 05 2016, Los Angeles, CA, USA

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DOI: 10.1145/3046055.3046060

Users' perceived social capital constitutes a significant factor so as to further understand their digital privacy practices regarding self-disclosure behaviors on SNSs [11]. Regardless their privacy concerns and their ability to manage effectively their digital privacy through SNSs features, users are willing to share personal information, as long as, through their engagement to SNSs, they may access and maintain bonding and bridging social capital. Nevertheless, this complex interrelation between these concepts and their interactive dynamics has not adequately been explored in previous research [12].

With this respect, this paper aims to explore the above mentioned complicated relationship emphasizing on the mediatory role of perceived social capital in users' decision-making process of self-disclosure that affects their digital privacy [2]. Our research focuses on Facebook (FB), among all SNSs, since it is the most favored worldwide, having diminished the significance of geographical proximity [13] in contact and its usage results in the accrual of users' social capital [14]. Our survey was distributed to a Greek adult population, the staff of the University of the Aegean, exploring how users' self-disclosure behaviors, privacy concerns and privacy settings usage interact with their perceived social capital. This paper enhances existing literature examining the interaction of these relationships combined, taking into consideration individual and structural factors, so as to further understand users' privacy behaviors on FB. The rest of the paper is organized as follows. Section 2 addresses related work on digital privacy on SNSs, perceived bonding and bridging social capital that results from FB usage, as well as self-disclosure on FB. Section 3 refers to the methodology regarding our research, hypotheses models, data collection and sampling, as well as the instrument that was distributed and its measures. In Section 4, the results concerning the correlation between users' self-disclosure, privacy concerns, privacy settings and perceived bonding and social capital are presented. Finally, Section 5 recalls the main findings of the research and discusses future research objectives.

## 2 RELATED WORK

Privacy, as a socially constructed value [15] into the boundaries of Information Society, has emerged to be a multidimensional issue [16], differentiating across diverse social frames. Its interpretation becomes more and more complex especially as far as SNSs are concerned [17, 18], since SNSs alter personal information management by facilitating information reproduction and broadcast [1]. In order to determine the concept of digital privacy regarding SNSs, previous literature [19, 20, 21] builds upon Westin's [22] and Altman's [23] theories. Westin [22] defines privacy as the individuals' right to self-determination regarding which of their information is accessible to whom and when, while Altman [23] maintains that privacy refers to individuals' selective control on other people's access to their own information. However, privacy on SNSs is not exclusively dependent on users' individual choices and therefore it is explored as a dynamic and ongoing process [20, 12, 1], where users balance between their needs for social interaction and their needs for privacy. In this respect and since individuals' privacy on SNSs is influenced by multiple individual and structural factors such as the network's composition, sites' structure and social norms [1], digital privacy on SNSs, in this paper, is considered accordingly to Acquisti's et al. [2] work (p. 9) "as the indefeasible right of an individual to control the ways in which personal information is obtained, processed, distributed, shared, and used by any other entity".

Due to these individual and structural factors that lead SNSs users to disclose demographic information, share emotions, thoughts and personal interests, post photos and videos, privacy is usually circumvented in many forms of unwanted or uncontrolled publicity, regardless the number of the audience that the information is broadcasted to [24, 25]. Respectively, users in order to diminish privacy risks exploit a variety of strategies, such as self-disclosure behaviors and technical audits provided by the SNSs [12, 11]. Stutzman, Gross και Acquisti's [26] longitudinal survey regarding users' self-disclosure behaviors on Facebook during 2005-2011, indicatively highlights that the amount of information users chooses to reveal to their Friends has increased, despite their privacy concerns, while the information they disclose to unfamiliar "Profiles" has been reduced. Taddicken [20] supports that there is a general tension between users' willingness to disclose information and their desire to protect their privacy, which leads users to underestimate the privacy risks on SNSs. Lack of privacy awareness, unfamiliarity with privacy protection technics, lack of knowledge about the extended use of broadcast information and the carelessness regarding privacy setting terms [27] are basic factors that lead to self-disclosure behaviors. Social factors are indicated [20, 28] to influence self-disclosure behaviors as well, such as Friends peering regarding privacy settings or social pressure for participating in the SNSs. Up to this point, previous literature argues that users disclose information to SNSs for several reasons, such as gaining financial rewards [29], spending their leisure pleasantly [30], increasing networking feelings through positive and fun self-disclosures [31], getting satisfaction by self-presentation in web [32]. De Wolf et al. [33] support that a basic parameter of self-disclosure which has been valued by the scholars [5, 34, 35, 36, 37] over the years is the producing, obtaining and maintaining of social capital.

Social capital refers to the benefits that individuals accrue due to their engagement to social networks and institutions [38, 39], where the latter are determined by characteristics such as shared values, trust, common codes of communication and common decision criteria [40]. Based on Bourdieu's definition [41] for social capital as "the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition", previous research indicates [42, 34, 9] that the most important categories of social capital regarding SNSs are bonding and bridging social capital. These categories refer to multiple resources provided by different types of relationships [43]. With this respect, bonding social capital refers to resources derived from tight relationships, such as close friends and family, while bridging social capital concerns resources derived from more diverse networks that cultivate common interest and connective ties [39]. A key component for accruing both types of social capital on SNSs as well as for engaging in SNSs is sharing [1]. SNSs facilitate users to disclose as much personal information about them as possible [44] and some of this information must be revealed mandatory [24]. So, users reveal information either in full publicity, including unknown users, or within selected networks of familiar users [20], even though, in both cases, information can easily be searched, copied, expanded and shared to whoever may be concerned [45]. Therefore, self-disclosure, regardless of users' privacy concerns, enables them to initiate and maintain relationships that lead to obtaining both types of social capital [35]. Social capital has a great impact on users' self-disclosure on SNSs [5, 10], as well as on their intensity usage [42], particularly in FB. FB, due to its popularity, its web structure, the information benefits and the easiness of social liaison that provides [7], is considered to be the SNS with the highest levels of social capital [36, 14, 43, 37]. Nonetheless, dynamics of FB do not facilitate digital privacy to be managed [1].

Besides users' willingness to disclose information in order to gain social capital benefits, ignoring their concerns [46, 10], the complicated and confusing FB Privacy settings [1] that have significantly changed over the last years [26] play an important role as well. With this respect, the developing relationships between users' digital privacy, self-disclosure behaviors and social capital on FB are extremely complex and interactive. Previous literature [12, 11] argues that most surveys examine these relationships separately. Furthermore, besides the positive correlation between FB and social capital, the significance of digital privacy regarding users' self-disclosure and perceived social capital has been overlooked. Stutzman's et al [12] study indicates that FB users' privacy concerns do not affect their perceived bonding and bridging social capital, though privacy is associated with their self-disclosure behaviors, which impact on perceived social capital either positively or negatively. Xu et al [46] support that perceived social capital is directly associated with FB users' self-disclosure, while it has greater impact on self-disclosure than privacy concerns. Therefore, further exploration is needed in order to understand the interactive correlations between these concepts.

### 3 METHODOLOGY

#### 3.1 Research model and Hypotheses

Building up on Ellison's et al [11] and Stutzman's et al [12] work, our exploratory research aims to investigate the complex relationship between users' digital privacy, social capital and self-disclosure behaviors, emphasizing on the mediate role of perceived social capital on self-disclosure, privacy concerns and privacy settings of FB Greek adults' users. Among all SNSs, our survey focused on FB, as it satisfies all the necessary aspects that Ellison and boyd [47] have identified for SNSs as networked communication platforms; these are a) the users' unique profiles with specific selective content by themselves, by other users or by the site itself, b) the public articulated "Friends" and c) the users' ability to manage generate content derived from their network. Our survey was distributed to the staff of the University of the Aegean, an adult population that we could easily access, in order to test Petronio's [48] argument that adults establish stricter privacy rules than teenagers compared to the findings of previous research that had been administrated to college students. In order to illustrate the structure of our hypotheses in our study we designed the following research models (Fig.1 and Fig.2). Our models focus on self-disclosure, as a common practice among FB users [20] that determines their engagement in FB, their interaction with other users, their shared content [12], as well as its impact on perceived bonding and bridging social capital [5]. Since self-disclosure and digital privacy on FB are directly related to the FB Privacy Settings features that specify which posts, comments or information are disclosed to which Friends' categories or to which "Walls" or "New Feeds" [37], our models include measures concerning FB Profile

settings and FB Privacy settings. These measures concern the effect on perceived bonding and bridging social capital, since it has been indicated that despite the variety feature users usually prefer standard settings in order to strengthen their networks and resources derived from them [49]. Privacy concerns, included in our models, refer to a widely used measure scale in privacy research. Since previous literature indicates contradictory findings regarding privacy concerns and self-disclosure on FB [26, 20, 12, 11], it is important to explore their impact on bonding and bridging social capital. Finally, our models include Bonding and Bridging social capital measure scales, adapted from previous literature [42], in order to explore perceived social capital’s interventional role on FB digital privacy and self-disclosure, as well as to indicate its positive or negative impact.

Therefore, our hypotheses are the following:

- H1: Users’ privacy concerns affect their perceived bonding or bridging social capital on FB.
- H2: Users’ FB privacy profile settings affect their perceived bonding or bridging social capital on FB.
- H3: Users’ FB privacy settings affect their perceived bonding or bridging social capital.
- H4: Users’ self-disclosure affects their perceived bonding or bridging social capital.
- H5: Users’ perceived bonding or bridging social capital affects their FB privacy profile settings positively or negatively.
- H6: Users’ perceived bonding or bridging social capital affects their FB privacy settings positively or negatively.
- H7: Users’ perceived bonding or bridging social capital affects their FB privacy concerns positively or negatively.
- H8: Users’ perceived bonding or bridging social capital affects their FB self-disclosure positively or negatively.
- H9: Users’ perceived bonding or bridging social capital has a greater impact on self-disclosure than privacy concerns

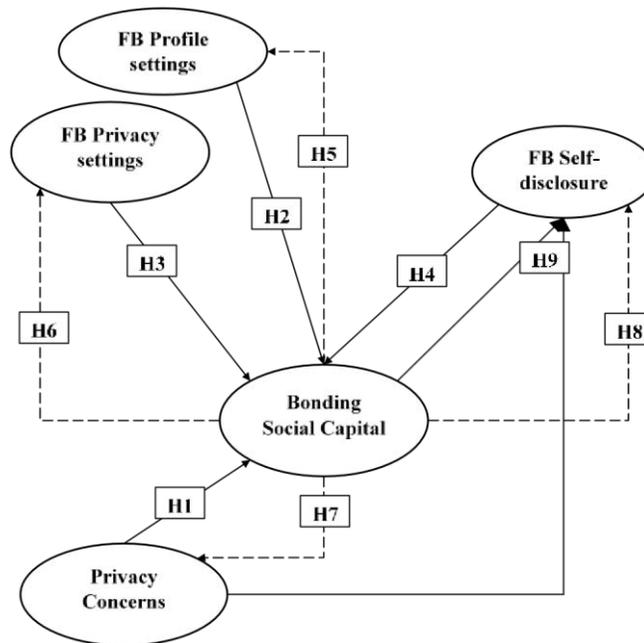


Fig. 1. Bonding Social Capital Research model and Hypotheses

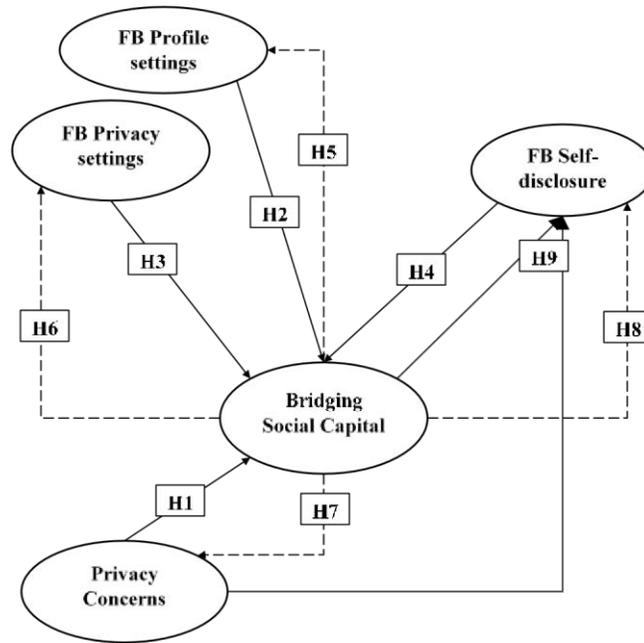


Fig. 2. Bridging Social Capital Research model and Hypotheses

### 3.2 Data collection and sampling

The staff of the University of the Aegean, 409 people in total, was selected as the research population in our exploratory survey. Besides the convenience reasons for recruiting the specific population, previous literature indicates that privacy is more wellmanaged in adulthood than in adolescence [33]. Furthermore, most of the surveys concerning social capital, privacy and selfdisclosure on Facebook have been administrated to teenagers [20]. The on-line questionnaire was accessible from January 21 to February 21 2016, through a hyperlink that was sent in the professional e-mails of the staff of the University of the Aegean. On the questionnaire, ethics was plainly described. The questionnaire yielded 125 responses. Since the existence of FB profile was prerequisite, 22 cases were excluded and consequently a total sample size of 103 participants was used in our survey, giving a response rate of 31%. Most of the participants were female (72%) respectively to the staff of the University of the Aegean that is composed of 70% of women. A rate of 57% holds a master degree. Table 1 below presents the participants' demographic profile fully.

Table 1. Sample Demographics

Variable	Number	Percent %
Gender		
Male	29	28%

Female	74	72%
Age		
26-35	12	12%
36-45	58	56%
46-55	31	30%
>56	2	2%
Studies		
High School	8	8%
Bachelor	32	31%
Master	59	57%
Ph.D.	4	4%

### 3.3 Instrumentation & Measure development

The questionnaire that was developed for data collection included seven sections of questions in order to explore the relationships among digital privacy, social capital and self-disclosure on Facebook. All items of these seven sections were adapted from previous literature as described in the following measurements. A set of three questions to address participants' socio-demographic characteristics, as recorded above, were included in the last part of the instrument, in order to take advantage of the beneficial time participants needed to complete it. Participants spent between 10 and 12 minutes to answer the online questionnaire. Before the incorporation of the questionnaire to the research population's emails, a pretest was administrated to three members of the staff in order to identify design problems and to revise items where it was necessary. The instrument was also tested for its validity and reliability. The procedure and the purpose of the survey were explained with clarity in the online questionnaire's introductory note.

**3.3.1 Self-Esteem.** The seven items of the section regarding self-esteem were adopted from Rosenberg Self-esteem Scale [50]. Participants were asked to rate their agreement on a 5-Point Likert scale in order to measure this variable, since it is indicated as an important parameter of users' perceived social capital in FB [36]. The items included: "In general, I am satisfied with myself", "From time to time, I think that I'm not good at anything", "I feel that I have a lot of good characteristics", "I am capable of doing things just as well as the other people do", "I feel that there is not much that I am proud of", "Occasionally I feel that I cannot offer anything at all" and "In General, I tend to feel like a loser".

**3.3.2 Facebook Intensity Use.** This section of questions was designed to measure FB intensity usage, including seven items that were compiled from previous research [43, 5, 36] highlighting it as a major factor for selfdisclosure and perceived social capital in FB. For items one to five, participants were asked to rate their agreements on a 5-Point Likert scale. Items included "FB is a part of my daily activities", "I am proud of my FB profile", "FB is a part of my daily routine", "I feel part of the FB community", "I would be sorry if FB was shut down". Items six to seven included: "How much time approximately do you spend actively on FB per day?" and "Which is the total number of your Friends on FB?".

**3.3.3 Perceived Bonding Social Capital.** The items of this section, which measures participants' perceived bonding social capital on FB, derived from Williams [51] Bonding Social Capital Scale, a scale that has been used in plenty of surveys as well [42, 43,36] providing the opportunity to compare our results with previous studies. Participants were asked to rate their agreement on a 5-Point Likert scale to the six following items : "If I needed 100€ urgently someone of my social network could lend me", "People of my social network could provide good job references for me", "I do not know anyone well enough to get him/her to do anything important", "When I feel lonely there are several people on FB I could talk to", "There are several people on FB I trust to solve my problems" and "I do not know anyone well enough from my FB network to get him/her to do anything important".

**3.3.4 Perceived Bridging Social Capital.** The items of this section, which measures participants' perceived bridging social capital on FB, derived as well from Williams [51] Bridging Social Capital Scale. The six statements, responded in a 5-Point Likert scale as in previous section, included: "Interacting with people in my social network makes me want to try new

things”, “I am willing to spend time on supporting community activities”, “I meet new people very often”, “Interacting with people in my FB network makes me want to try new things”, “Interacting with people in my FB network makes me feel like a part of a larger community” and “Interacting with people in my FB network makes me realize that somehow we are all connected worldwide”.

*3.3.5 Digital privacy on FB.* In this section, aiming to measure how participants use FB profile settings and FB privacy settings, two items were adopted from previous research [12, 11] that indicated the importance of privacy settings’ use in order to explore the relationship between digital privacy and perceived social capital. Participants were asked to respond if their “FB profile is visible to all, to my Friends or to a specific group of Friends” and to the dichotomous question “Have you ever changed the FB privacy settings so that only some of your friends can view certain types of content?”

*3.3.6 Self-disclosure on FB.* In this section, participants were asked to respond to seven dichotomous items compiled from previous research [5, 10], regarding the information they disclose on FB. Items included: “My FB profile includes my real name”, “My FB profile includes my real photo”, “My FB profile includes my birthday”, “My FB profile includes my address”, “My FB profile includes my email”, “My FB profile includes my phone number” and “My FB profile includes my personal status”. Additionally, participants were asked to rate their agreement on a 5-Point Likert scale regarding the following: “When I have an accomplishment that I’m proud of, I share it on FB”, “I post comments on FB regarding my political and religious beliefs” and “When I have a bad day, I post it on FB”.

*3.3.7 Privacy concerns on FB.* Three dichotomous items were adopted from previous literature [12, 52, 33] in order to measure participants’ privacy concerns regarding their engagement on FB. Items included: “Are you concerned that being on FB can cause you harassment or unauthorized access to your system data?”, “Are you concerned about the disclosure of personal information on FB?” and “Are you concerned about potential or current employers viewing incriminating content about you on FB?”.

## 4 RESEARCH RESULTS

At first, some basic descriptive data are presented aiming to outline participants’ behaviors regarding their engagement in FB, as well their perceived bonding and bridging social capital, their self-disclosure and their digital privacy patterns as well as their privacy concerns on FB. Each measure that was used compiled into a single index. The findings of our hypotheses follow to provide insight into the relationships between the variables.

### 4.1 Descriptive

A great proportion of the participants (81.7%) report a high level of self-esteem, indicating this as their characteristic. This is a factor of great importance for obtaining social capital [42, 36]. On the other hand, FB intensity usage which is another significant parameter for accruing social capital is recorded to be too low, since most of the participants (73.8%) are engaged in FB less than 30 minutes daily. Participants’ perceived bonding and bridging social capital values are recorded 3.35 and 3.09 (mean) respectively, while it is indicated that bonding social capital value is higher than bridging. While our findings highlight that participants’ privacy concerns range to a high level, they simultaneously indicate a high degree of self-disclosure, regarding, though, their sharing content and not their personal information, such as telephone number, home address and e-mail address. Even though 66% of the participants have their profile visible only to friends, only 55% is recorded having changed the FB privacy settings. [Table 2](#) below presents descriptive data for the measurements of Self-esteem (5-Point Likert scale), FB intensity (5-Point Likert scale), Bonding social capital (5-Point Likert scale), Bridging social capital (5-Point Likert scale), FB self-disclosure (5-Point Likert scale) and FB Privacy concerns (dichotomous scale). [Table 3](#) presents descriptive data regarding FB Privacy settings, FB Profile Privacy settings and FB daily engagement as following.

Table 2. **Descriptive data**

	Mean	SD

Self-esteem scale	4.09	.573
FB intensity scale	2.89	.953
Bonding social capital scale	3.35	.783
Bridging social capital scale	3.09	.74
FB self-disclosure scale	2.31	.299
FB Privacy concerns scale	1.24	.315

Table 3. **Privacy settings management & Facebook engagement**

<b>FB Privacy settings-changes</b>	<b>percent %</b>
Yes	45%
No	55%
<b>FB Privacy settings-profile</b>	
visible to all	27%
visible to Friends	66%
visible to specific group of Friends	7%

<b>FB daily engagement</b>	
<10min	28.2%
10-30min	45.6%
31-60min	10.7%
1-2hours	12.6%
2-3hours	1.0%
>3hours	1.9%

## 4.2 Findings

Before testing our hypotheses, the variable of age was included in our data analysis since previous literature underlines the significance of age in digital privacy conceptualization [15] and its management [33]. Most surveys concerning FB, social capital and privacy have been distributed to college students for reasons of convenience [20]. In our study 12% of our participants were between 26-35 years old, 56% between 36-45 years old, 30% between 46-55 years old and 2% older than 56 years old. We examined age by using chi-square tests and Pearson  $r$  correlation tests. Age has been found to be significantly associated with users' privacy concerns and their relation is positively correlated (coefficient Pearson = .249), while its significance is indicated ( $p$ -value = .011 < .05). Additionally, findings show that age is also related to users' FB profile settings, though this relationship is negatively correlated (coefficient Pearson = -.328) and ( $p$ -value = .001 < .01). Additionally, the variable of gender was tested (male= 28%, female= 72% accordingly to the total research population male= 30%, female= 70%), and it was found to be positively correlated with users' FB profile settings (coefficient Pearson = .280) and ( $p$ -value = .004 < .01).

In order to explore the relationships between digital privacy, social capital and self-disclosure, addressing our hypotheses H1 to H8, one-way ANOVA tests were employed. Respectively for our first hypothesis/H1, "Users' privacy concerns affect their perceived bonding or bridging social capital on FB", regarding the positive or negative effect of FB privacy concerns on users' perceived bonding social capital, findings ( $p$ = .177 > .05) indicate that there is no clear correlation. No clear correlation is recorded for perceived bridging social capital either and therefore our H1 is not supported. Regarding H2, "Users' FB privacy profile settings affect their perceived bonding or bridging social capital on FB", where the relation between users' FB profile settings and perceived bonding and bridging social capital is examined, findings show a positive correlation between FB profile settings and bridging social capital ( $p$ = .045 < .05), while a respective correlation is not supported for bonding social capital ( $p$ = .458 > .05) and therefore our H2 is partially supported.

For H3, “Users’ FB privacy settings affect their perceived bonding or bridging social capital”, Bonding social capital was firstly tested with the FB privacy settings variable as independent, and Bridging Social Capital afterwards. This hypothesis is not confirmed either for Bonding Social Capital ( $p = .599 > .05$ ) or Bridging Social Capital ( $p = .126 > .05$ ), highlighting that there is no direct effect on these.

On the other hand, as far as users’ self-disclosure effect on their perceived bonding or bridging social capital is concerned according to H4, “Users’ self-disclosure affects their perceived bonding or bridging social capital”, findings indicate a significant positive relation with both types of social capital -Bonding Social Capital ( $p = .024 < .05$ )-, and especially for Bridging Social Capital ( $p = .005 < .05$ ). Therefore, H4 is fully supported.

The same tests were applied for H5, “Users’ perceived bonding or bridging social capital affects their FB privacy profile settings positively or negatively”, where Bonding and Bridging Social Capital were examined as the independent variables regarding their effect on users’ FB profile settings. This Hypothesis was not confirmed either for Bonding Social Capital ( $p = .283 > .05$ ) or for Bridging ( $p = .637 > .05$ ).

Though it is indicated regarding H6, “Users’ perceived bonding or bridging social capital affects their FB privacy settings positively or negatively”, that perceived Bridging Social Capital has a positive effect on users’ FB privacy settings ( $p = .009 < .05$ ), there is no correlation as far as Bonding Social Capital is concerned ( $p = .920 > .05$ ). Consequently, our H6 is partially supported. Additionally, H7, “Users’ perceived bonding or bridging social capital affects their FB privacy concerns positively or negatively”, is not supported for either of Bonding ( $p = .305 > .05$ ) and Bridging Social Capital ( $p = .663 > .05$ ) regarding users’ FB privacy concerns. It is noteworthy that though users’ perceived Bridging Social Capital affects positively their FB self-disclosure ( $p = .025 < .05$ ), Bonding Social Capital does not ( $p = .205 > .05$ ). Therefore, our H8, “Users’ perceived bonding or bridging social capital affects their FB self-disclosure positively or negatively”, is partially supported.

Having indicated that there is no direct effect between both types of Social Capital and FB privacy concerns, a multiple regression analysis model was implied in order to test our H9, “Users’ perceived bonding or bridging social capital has a greater impact on self-disclosure than privacy concerns”, regarding the impact of users’ perceived bonding or bridging social capital on self-disclosure compared to their privacy concerns. For our first pair of independent variables -Bonding Social Capital & privacy concerns- F-test results ( $p = .020 < .05$ ) support that the model amplifies the dependent variable. The regression analysis indicates that the value of Bonding social capital ( $\beta = .079$ ) is greater than that of privacy concerns ( $\beta = .040$ ), while the variable Bonding social capital is significant ( $p = .009 < .05$ ).

As far as the second pair of independent variables -Bridging social capital & privacy- is concerned, our Hypothesis is also supported ( $p = .005 < .05$ ). The regression analysis indicates that the value of Bridging Social capital ( $\beta = .097$ ) is greater than that of privacy concerns ( $\beta = .071$ ). Furthermore, it is indicated, based on the t-test applied to the two independent variables, that the effect of bridging social capital on the dependent variable (self-disclosure) is significant ( $p = .002 < .05$ ), while the effect of privacy concerns is not ( $p = .323 > .05$ ). Finally, our findings indicate that regardless their FB privacy concerns, users are willing to disclose information in order to acquire either Bonding or Bridging Social Capital on FB, since Bonding and Bridging Social Capital affect much more SelfDisclosure than FB Privacy Concerns do.

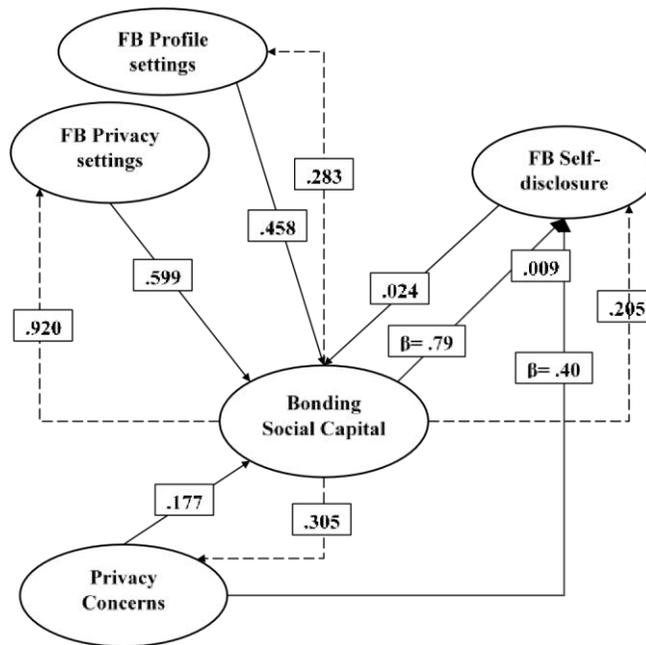


Fig. 3. Results for Bonding Social Capital Research model

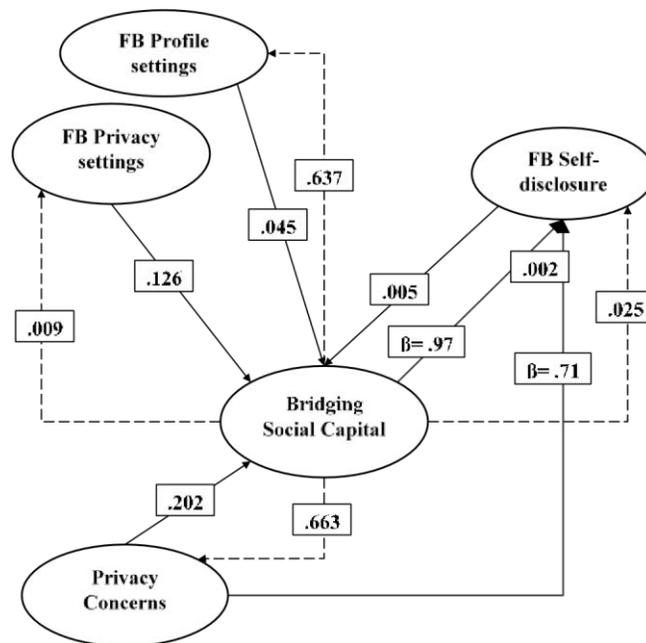


Fig. 4. Results for Bridging Social Capital Research model

## 5 DISCUSSION - CONCLUSIONS

Our research aims to contribute to a further empirical association of digital privacy, perceived social capital and users' self-disclosure behaviors on FB, highlighting their latent and underlying interactional dynamics, as it takes into consideration that digital privacy is determined by shared social norms that affect users' self-disclosure behaviors [1]. Providing new empirical data, our survey enhances previous literature regarding the developing correlations among these concepts [12, 11], indicating the pivotal role of perceived bonding and bridging social capital, as well as its impact regarding the understanding and the interpretation of FB users' digital privacy and self-disclosure.

Furthermore, since our survey measurements have been adapted by previous research, our study conduces to existing literature as well, by providing the opportunity for data comparisons with previous surveys. Our survey was administrated to a working population, the staff of the University of the Aegean in Greece. The data deriving from this research population provide insight to a different age group, as most of the previous researches on these issues have been distributed to young adults or college students in USA [20]. Though literature [48] indicates that adults manage their privacy stricter than younger, our findings show an adverse relationship between users' age and the ways they use FB profile settings, even though their age is positively associated with privacy concerns. Additionally, to our best knowledge, this is the first survey concerning digital privacy, social capital and self-disclosure elaborated in Greece, so it provides insight into a target-group with different cultural representations regarding digital privacy. FB's impact on social relationships has expanded over the last years, as it facilitates the initiation of relationships beyond close friends and sometimes beyond their digital identities, strengthening its role regarding the production of social capital [53]. Since our findings highlight a higher index for users' perceived bonding social capital, this may indicate that Greek social norms affect enhancing tight ties on FB, such as family and close friends.

SNSs provide users with the ability to see others and to be seen [1], expanding the exercised informal social control among them [25], as well as rising privacy concerns. Our findings though show that there is no direct affect between privacy concerns and perceived bonding and bridging social capital, supporting Stutzman's et al work [12]. Users' FB profile settings effect on their perceived social capital, but only with reference to the bridging type, while users' investments on bridging social capital are also positively associated with their FB profile settings. These findings, supporting previous research as well [12, 11], indicate that more exploration is needed in order to understand further their correlations as they may be affected by several social factors, such as social life management [54]. On the other hand, with reference to the relation between users' self-disclosure and perceived social capital, it is indicated that a reciprocal positive impact exists between them regarding perceived bridging social capital especially. This shows that users have a greater need for obtaining bridging social capital. Bridging social capital is considered to function as an underlying reinforcing mechanism that feeds the mutual interactions between SNSs and self-disclosure [10]. The specific dimension is of great importance as it increases the complexity between users' digital privacy and the modulation procedures for obtaining social capital benefits on FB.

Supporting that perceived social capital is not just an output deriving from FB' use, but it also constitutes an important influential factor on FB users' behaviors, our findings, finally, indicate a greater impact of both bonding and bridging social capital on users' self-disclosure behaviors than their privacy concerns do [55]. These findings support previous literature [46, 12], showing that the relation between digital privacy and social capital could be paradoxical as well, since digital privacy may lead either to increasing or restraining social capital acquisition on the site. Even though no claims could be made about generalizing these findings, since our sample ranged to N=103 and no specific self-disclosures practices and influential factors, such as disclosure duration, were included in our measurements [56], our exploratory survey gives a further insight into this study field, being not only consistent with previous literature, but pointing out new linkages among the explored variables as well. Our research models aimed to explore the relation between different constructs with a more comprehensive view of digital privacy, perceived social capital and self-disclosure behaviors on FB, contributing to future research.

Since the constructs of bonding and bridging social capital are important factors for comprehending users' behavioral patterns for their digital privacy protection, our construct model could be used as the foundation for an extended conceptual model leading to a further and deeper clarification and classification of the interactive dynamics of the explored variables. This further understanding may contribute to the recognition of more privacy requirements needed in FB in order for privacy risks to be restrained, so that users can fully exercise their right to digital privacy on FB.

## ACKNOWLEDGMENTS

This work was partially supported by the MIUR-PRIN 2010--11 Project 2010ECA8P3 "DyNanoMag" and by the National Research Foundation, Prime Minister's office, Singapore under its Competitive Research Programme (CRP Award No. NRF-CRP 10-2012-03).

## A HEADINGS IN APPENDICES

The rules about hierarchical headings discussed above for the body of the article are different in the appendices. In the appendix environment, the command section is used to indicate the start of each Appendix, with alphabetic order designation (i.e., the first is A, the second B, etc.) and a title (if you include one). So, if you need hierarchical structure within an Appendix, start with subsection as the highest level. Here is an outline of the body of this document in Appendix-appropriate form:

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