

Social Capital, Internet Connectedness & Political Participation: A Four-Country Study

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Abstract

This paper examines the relationship between social capital, Internet connectedness and political participation in Australia, Canada, the United Kingdom and the United States. While a number of studies have hypothesized a relationship between social capital and political participation, few have been able to model, measure and compare levels of engagement beyond the general consensus that higher levels of social capital mean higher levels of political involvement. While some studies have claimed that Internet use has negative effects on these areas of life, others have argued for negligible or even positive outcomes. We develop a typology of Internet users (socialisers, utilitarians, and game-players) and explore a relationship between technological connectedness and political participation that we hypothesize is positively moderated by social capital connectedness. Using structural equation modeling on the Survey2000 dataset, we find no significant negative effect of connectedness on social capital, a negative effect of connectedness on political participation in the United States except when mediated by social capital, and different degrees of positive effects of connectedness on social capital and political participation varying by Internet user and by country.

Introduction

Over the course of the last decade commentators have increasingly bemoaned the lack of interest in modern democracy – voter turnout is in decline, active participation in civic institutions has deteriorated, and surveys regularly report diminishing public faith in political institutions. One prominent explanation for this apparent democratic malaise has been declining levels of social capital amongst citizens. Much has been made of the detrimental role of television news media in eroding public trust in government and associated political institutions. Some argue that new forms of electronic communication, such as the Internet, can compound these detrimental effects. Other pundits have hailed the growth of the Internet as a means of reviving social capital and consequently reinvigorating liberal democracy. They point towards the new possibilities for citizens to socialize and build communities online overcoming the problems of time or geography. In the political sphere, the Internet can allow people more access to information about candidates or policy options and also provide an easy forum for political debate. Others argue the contrary, that new information communication technologies are likely to have a negative effect. Critics often point out that electronic communication is an inherently individual pursuit and that people can easily disengage from social norms when online. The quality of online debate and engagement has consistently been questioned, as deliberation is lost from the democratic process. Furthermore, the technology is still too expensive to be useful for many politically and economically marginal groups creating further social and political exclusion.

Based upon the arguments made in these debates, this paper explores the links between the role of Internet based technology, social capital, and political participation through mass survey data gathered from respondents in Australia, Canada, the United Kingdom and United States. On the one hand, Internet connectedness may increase personal social capital in individuals and raise levels of political participation. On the other hand, Internet connectedness may diminish social capital in individuals and thus lower levels of political participation.

Social Capital, Connectedness & Political Participation

Social Capital

Despite its uniqueness, social capital shares elements of other kinds of capital and is a logical extension of the academic interest in understanding modes of economic production. Examples of physical capital

are the most easily identifiable elements of production: property, tools, supplies, and other material inputs. Financial capital is the credit that makes the acquisition of physical capital possible. Human capital is the education, experience or job training that makes labour crucial to the assembly and sale of products. However, many scholars now group the residual properties of the production function, such as information, trust, and feelings of obligation, to a kind of capital residing in the benefits of social interaction. Since other forms of capital in the production function are supposed to be easily quantifiable, labelling the emergent properties of social interaction a kind of capital conforms to the ideological position that socio-economic activity consists of measurable elements. Both groups and individuals can have social capital, but we are primarily interested in predicting the odds of a person being politically active. Thus, we define social capital as the norms of trust and reciprocity that an individual holds towards other individuals.

Norms of trust and reciprocity are necessary for functional polities because they legitimize and motivate institutions of governance. Executive, legislative and judicial branches of government need the trust and respect of citizens, and political scientists are often occupied with the questions of whether that trust and respect is increasing or decreasing (Citrin & Green, 1986; Feldman, 1983, Miller & Borrelli, 1991; Putnam, 1995a, 1995, 2000; Teixeira, 1992). An important correlation with healthy institutions of governance is widespread participation in voluntary associations, though scholars disagree whether volunteerism raises faith in governance or vice versa (Curtis & Grabb, 1992; Dahl, 1971; Verba & Schlozman, 1995).¹A population's governability is often characterized as feature of its political culture and a large amount of social capital allows a special synergy between civil society and governing institutions (Diamond, 1993; Evans, 1996) or between the complex interaction of private and public spheres of social networks that can bring out the norms, rules and patterns of behaviour which manifest trust and reciprocity (Gerschenkron, 1962; Hirschman, 1958; Polanyi, 1985; Wade, 1990). There is, however, little consensus on how this synergy or interaction works, and some argue that state intervention ruins social capital because it stymies political culture (Harrison, 1992; Fukuyama, 1995) and creates predatory state institutions (Wade, 1982), while others argue that state intervention has nurtured political culture in Japan and certain states in India (Heller, 1996; Johnson, 1982). Whatever the formula may be, raising social capital in developing countries can be as slow as raising it in the neighbourhoods and cities of the developed countries (Inglehart, 1990 and 1997; Inkeles & Smith, 1974;

McDonough, 1986). Moreover, it can be quickly dissolved by events that break the bonds of trust between citizen and state (Mishler & Rose, 1994 and 1997; Jackman & Miller, 1996).ⁱⁱ

One of the books that ensured widespread use of the notion of social capital — Putnam's *Making Democracy Work* — explains the different supplies of social capital available in the North and South of Italy as ultimately being the result of different political cultures and the weight of history (Putnam, 1993). However, variations in 'political culture' have been the black box explanation used by scholars of comparative politics since Almond and Verba's first study of governance (Verba & Almond, 1969; followed up with 1978 and 1989). For example, in the United States, the government relies on the trust of citizens, whereas in Taiwan the government relies on the rule of law (Fellmeth, 1996).ⁱⁱⁱ The relationship between the social capital of civil society and governing institutions is best described as reciprocal because governing institutions can stimulate participation (Fox, 1996) or sever social networks (Gambetta, 1988).

Measuring Social Capital in Individuals

While some scholars think of social capital as a property of groups, others think of it as a property of individuals; ultimately, personal favours and private goods are held and exchanged by people. Even if we study the trust and associations of individuals, by studying the network of individuals we can assume that an individual's association with two groups may also measure the strength of association between the two groups.

Trust. Many definitions of trust are couched in the language of collective action scholarship by framing trust as the result of repeated interaction and personal familiarity with the likely outcome of somewhat familiar problems. For example, in *The Logic and Limits of Trust*, Barber defines trust as socially learned and socially confirmed expectations that people have of each other, of the organizations and institutions in which they live, and of the natural and moral social orders, that set the fundamental understandings of their lives (Barber, 1983, p. 162).

Building trust requires the repeated assessment of risk, and it can also be thought of as an expression of confidence (Luhmann, 1988a) in the factors important to an assessment of risk (other people's behaviour,

technical skill, moral fortitude, likelihood of reward or sanction, etc). Taken together, trust between individuals eliminates the need for third parties to attest to character or to provide credit, thus increasing efficiency and productivity (Fukuyama, 1995 and Granovetter, 1985 make this point for national economic efficiency). Trust between individuals is difficult to measure and rarely studied empirically, but trust in government institutions is often measured — as Putnam does — in terms of voter turn out, membership in political groups, and participation in group sports, hobbies or other recreational activities.

Association. The most common empirical tool used for measuring social capital is analysis of individual associations. It is easy to survey the number and types of associations that people have, and then estimate the general level of association of the general population. Association reveals the depth of social capital in that people who are more connected through their participation in events and familiarity with the cultural objects defining collective identity will be better able to assess risk and social collateral. Associations can be formal, informal, voluntary, involuntary, and inherited.

First, associations can be formal in that responsibilities are clear and known to both members and outsiders, and in that institutional arrangements outlive the degradation of ties between any particular individuals. Second, associations can be informal, in that individuals must constantly re-evaluate and weigh the obligations and meaning of association such that outsiders are largely unable to interpret the terms of association. For example, mafia or family politics are rarely clear to outsiders. Third, individuals in voluntary associations are likely to hold more social capital simply because they choose to abide by the terms of association, and can easily imagine that all the other members are also voluntarily faithful. Fourth, individuals in involuntary associations are likely to hold less social capital because they cannot be as certain that other individuals will share the norms of the group. Finally, inherited associations are not as strong as voluntary associations but not as weak as involuntary associations. An individual's friendships with schoolmates, fellow workers, or people of the same ethnicity or nationality living in other countries can create social capital through communication of opportunities and other forms of social support. Even though individuals do not choose their family or ethnicity, they can sometimes be assured of certain benefits. Thus, social capital can be measured either by studying the aggregate levels of association in a population, or by fully enumerating the density and reach of a particular individual's network of associations.

The Potential Impact of the Internet

The Internet is often characterized as the home of a new civic community, or as the latest technological tool of society's intellectual, financial, and social elites. Popular commentary on the social impact of Internet technologies ranges from cynically sceptical to the creatively hyperbolic. Speculation about the demographics and ethos of net users abounds in popular media, usually accompanied by bold predictions and generous metaphors about how the net can level the informational playing fields and ensure the equitable development of humankind through the teleological benefits of interconnectedness (Leonard, 1997; Negroponte, 1995; Dizard, 1996; Rheingold, 1993; Seabrook, 1997). Scenarios of increasing participation, as people are able to vote in elections and referenda from their living rooms (Alexander and Pal, 1998; Freeman, 1997; Allen, 1995; Mulgan and Adonis, 1994), have competed with more radical visions of the decline of intermediary institutions, the rise of direct democracy and a new and improved public space for debate (Rheingold, 1996; Negroponte, 1995; Dyson et al, 1994). Proponents of these democratization scenarios argue that the Internet will increase levels of voting, contacting and information gathering, as this media increases the rational and expressive benefits of participation. The physical and cognitive barriers are brought down as more information becomes more easily available and new electronic tools for more direct debate at the mass level and between masses and elites are offered. It will be easier for citizens to create online communities and foster social capital regardless of the barriers of geography or time. According to these accounts, the Internet will not only widen but also deepen the participatory process, reengaging the disaffected, and incorporating those previously lacking the time or capability.

Harnessing new media for citizen participation has not excited optimism in all quarters, however. Problems have been highlighted in two areas. Firstly, commentators have expressed fears for a widening gap between participators and non-participators in society as a new IT literate or digerati emerge and there is a consequent narrowing of the politically active segment of the population (Barber, 1997; Coleman, 1999; Winner 1997; Schiller, 1996; Resnick, 1999). The financial and cognitive skills necessary to engage with the new modes of participation may only be found within elite strata of society who are already hold large amounts of social capital and participate extensively in the political system. The impact of the Internet will thus lead to a reinforcement and exacerbation of existing participation

bias, producing a society of informational haves and have-nots. The second problematic area critics have highlighted regards the quality of electronic participation with predictions of a decline in discursive debate a reduction of association and collective action, as individuals sit alone pushing buttons on their TV consoles.

Electronic Participation: The Early Empirical Evidence

There are few studies directly analyzing the relationship between social capital and connectedness. Thus far, the majority of empirical studies have tended to focus on the broad socio-economic and demographic characteristics of those with access to the Internet. However, there is a growing body of political surveys which have concentrated on whether new technology will “influence who participates in political life by widening the pool of activists, or will it serve to reinforce the existing gap between the engaged and the apathetic?” (Norris, 1998). Overall, the general conclusion of these studies appears to be no, but with some significant caveats attached. Political activity online seems to mirror and amplify the demographic bias of its off-line counterpart. Major studies of users have all portrayed a fairly consistent picture. Heavy Internet users tend to be predominantly male, middle class, in professional employment, with high educational attainment, between the ages of 24–40 years old, residing in urban areas. In both the USA and Europe the work of Norris (1998; 1999; 2000) and Bimber (1998) over a three-year period (1995–1998), indicates that those accessing the Internet and using it for political purposes (either information seeking or contacting and discussion) had higher levels of political interest, knowledge, and efficacy and were of higher socio-economic status. Similarly, in the European context Gibson and Ward (1999) identified the key variable determining on-line political activity was one’s pre-existing proclivity to engage in political debate off-line. A common conclusion of these early studies is “...those who enjoy Internet access are precisely the people who are most likely to participate in politics. The population with low rates of participation are considerably underrepresented” (Brown and Svennevig, 1999).

Nevertheless, important caveats have been offered in relation to these general trends that may provide hope for supposedly democratizing and participatory potential of new information communication technologies. First, some of results are not surprising given that “connectivity” was initially limited to corporations and government organizations willing to provide the technology to their staff, and universities willing to provide the technology to their faculty and students. For the first decade of its

commercial availability, connectivity remained a luxury expenditure. The cost of using the Internet is now diminishing quickly, a factor that is allowing the technology to penetrate deeper into modern societies. As many of the surveys therefore point out, uneven profiles may level out over time as access increases. As a result, some of these demographic imbalances may be relatively short lived, others more enduring. Although income and class disparities appear as yet stubbornly ingrained, evidence is already emerging that the gender and age distinctions are being eroded. More women and older people have moved on-line since 1998 and surveys are now showing that the number of women on-line in the UK is nearing 40 percent and nearing 50 percent in the United States.^{iv} Second, some surveys have indicated the greater proportion of younger users (18–29 year olds) relying on the Net for news. Such a trend could lead to greater political involvement amongst this traditionally disinterested group. Thirdly, in the USA at least, Bimber (1998) detected that general levels of civic engagement and propensity to vote actually increased among those with Internet access, regardless of socio-economic status. This led him to conclude that cyberspace "... may not simply be gathering place for the well educated, but a gathering place for skilled, connected citizens, who also tend to be more engaged in politics than others". More crucially Bimber's results suggest the tantalizing possibility that going online itself acts in some way to stimulate higher involvement in 'real world' politics.

Hypotheses and Models

Based upon these theoretical arguments we test the following basic causal models and hypotheses. In addition, since the literature on the topic indicates that there might be more than one type or mode of Internet use we expand the basic model to incorporate a fourth hypothesis. Namely, if Internet use does produce higher levels of social capital, we would expect the effect to be strongest among those that use it in a more active manner.

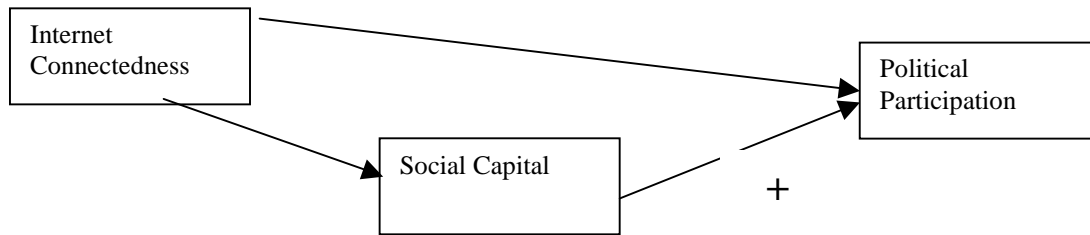
H1: The higher one's level of social capital the more one engages in political participation.

H2: The higher one's level of Internet connectedness the higher one's level of social capital and the more one engages in political participation.

H3: The higher one's level of Internet connectedness the lower one's level of social capital and the less one engages in political participation.

H4: If Internet use positively affects levels of social capital and political participation, this effect will be stronger for active users than for passive users.

Figure 1: Causal Model 1 – Social Capital, Technological Connectedness and Political Participation for the General Internet User



Data and Methodology

In order to test the model represented in Figure 1 we use data from Survey2000, a World Wide Web (WWW) based survey focusing on geographic mobility, community and cultural identity.^y Over 60,000 individuals worldwide took part in the Survey2000 data collection in the fall of 1998. The Survey was placed on the home page of the National Geographic Society. Respondents who chose to complete the self-administered survey did so by following a series of instructional pages through to the first set of questions. The National Geographic Society itself, and a team of researchers who advertised the effort through discussion groups, colleagues, public libraries, schools, and websites around the world generated publicity for the project. The survey instrument was designed to take advantage of the unique multimedia capabilities of the Internet, using images, colours and music to make the survey interesting for respondents.

Respondents began by supplying basic demographic information, including current primary residence, zip or postal code, marital status and household composition. Respondents were also asked to identify languages regularly spoken in the household; however, the survey was only presented in English. Further questions asked about race and ethnicity, educational enrolment and attainment and current employment status. Separate response codes were offered to US and Canadian respondents. Questions concerning race and ethnicity were worded to prompt the respondents to self-identify as they normally do on government forms.

This paper tests the model with data with completed surveys from adult respondents in the survey (i.e. above 16 years of age) in four different countries: Australia (n=804), Canada (n=2,215), the UK (n=733), and the United States (n = 16,088). These samples were extracted from a total of 64,651 surveys, 23,886 of which were completed in full. We chose to compare these four countries for several

reasons. As four modern economies they may anticipate the developing social role of the Internet in other countries, and Internet penetration is solid but differentiated between cases. At the same time, they are all English-speaking democracies, so using four countries gives us large overall sample – 19,880 completed surveys – in which wildly different political culture should not be credited for differences in social capital.

Demographic and Social Profile of Online Population

Problems do arise with a web-based survey in that the sample is clearly not random, nor do we know the selection probabilities of respondents for weighting purposes. These limitations, however, do not necessarily create a problem for our analysis because online users are the population of interest. No frequency distribution really exists for the online population, so the sampling distribution created by this giant snowball survey is the next best thing. The Survey2000 data allow us to compare more and less experienced Internet users, which is arguably a more meaningful test of Internet use on levels of social capital than simple comparisons between users and non-users. Level of experience ranged from less than one month to more than three years and as Table 1 indicates, the variability of the samples was quite wide in this regard, although most were longer-term users.

As most surveys of Internet users have shown, the population of users tend to be male, younger, and more highly educated than the rest of the population, although there is accumulating evidence that these differences are being eroded over time (Bimber, 1998, Norris, 1999, 2000, Nie & Ebring, 2000, Witte & Howard). This bias is reflected in our country samples, as Table 1 shows. Respondents are more likely to be male, more highly educated, younger, and more likely to be employed, although the concentrations are slightly less marked than one might expect, the US, in particular has

a fairly evenly distributed sample across the various demographic and social categories.^{vi} Given that these characteristics clearly have the potential to affect levels of social capital beyond Internet use, however, their effects are modeled in our analysis.

Measuring Political Participation (Dependent Variable)

To measure participation respondents were measured on a 0-8 point scale that registered how many of the following modes of political participation they had engaged in: signed a petition, attended a public meeting or town or school affairs meeting, written an elected government representative, attended a political rally or speech, served on a committee for some local organization, worked for a political party, been a member of a group interested in better government, or held or run for political office? The responses were coded dichotomously, 1 indicating that they have engaged in the activity, and 0 that they have not.^{vii} The variables were factor analyzed for unidimensionality, the factor scores are reported in Table 1 in the appendix.

Measuring Social Capital (Independent Variable)

Social capital was measured using three composite variables. *Civic Engagement* referred to the extent of the respondents' involvement in various social and community-based organizations. A zero to seven additive scale was computed that indicated if respondents were members of the following: service clubs, a hobby or garden club, environmental groups, community/neighbourhood groups, social advocacy groups, literary, art societies, professional or academic societies. Membership was coded as (1) and non-membership as (0).^{viii} *Social Connectedness* referred to level of interaction that respondents' reported with friends. A zero to seven additive scale was computed based on whether respondents reported that they did any of the following: getting together with friends, personal visits, telephoning/faxing, writing letters/cards to friends within 30 miles and also any of these activities with friends beyond 30 miles. Responses were recoded so that engaging in the activity (1), never or rarely engaging in the activity (0).^{ix} *Community Support* referred to the feelings of warmth and closeness that respondents' reported toward their community. A zero to eight scale was computed based on responses to two questions measuring this aspect of social affect: (1) that my community is source of comfort to me; and (2) that I feel close to my community. The scores were coded into a 0-4 scale with 0 = disagreement and 1-4 indicating don't

know to strongly agree. The scores from each scale were added together to form the overall community support scores.^x

Measuring Internet Connectedness (Moderating Variable)

It is hard to develop a 'pure' measure of Internet connectedness that is independent from the connectedness inherent in social capital. For instance, using email or joining a listserv implies a degree of interactivity or online social capital that simply surfing the web, or reading an online newspaper do not. In order to test the first three hypotheses a single indicator of Internet connectedness was used which measured how long the respondent reported being online. This was measured on a six point Likert scale, ranging from (1) for one month or less to (6) more than three years ago (see Table 1 for all categories).

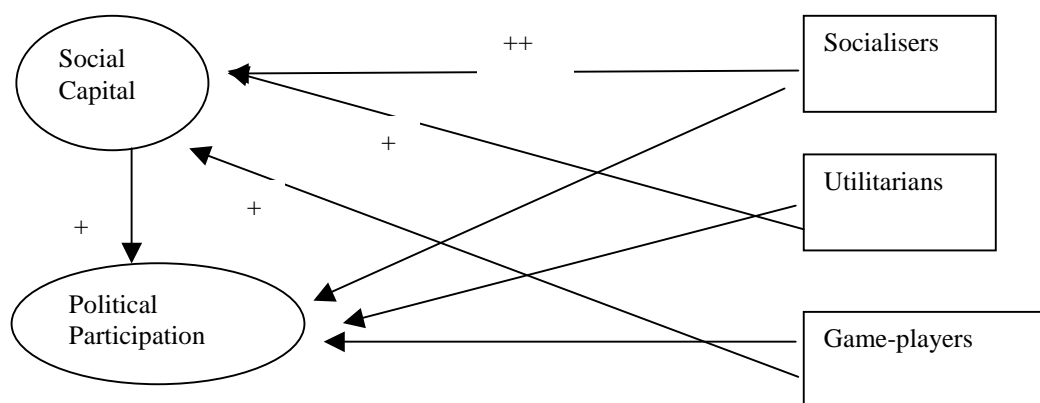
For Hypothesis 4, Survey2000 offers a rich set of variables to explore the dimensions within Internet usage focusing on (1) attitudes toward the Internet (how much respondents like and trust the Internet as a communication device) and (2) uses of the Internet (email, web surfing, chat groups etc.). In order to identify the types of Internet user a principal components exploratory factor analysis (with an oblique rotation) was conducted on the pooled sample. It was expected that a basic distinction between more active and passive types of usage of the net would emerge. The resulting analysis revealed five factors that are broken down into three 'types' of user: (i) socialisers/community-builders; (ii) utilitarians and (iii) games players/recreational users. The socialisers or community-building factor identifies an orientation that reports strong positive feelings toward the Internet based on the relationships and friendships they had made or cemented online. Utilitarians use the Internet primarily to 'do' something such as find information, make a purchase, and access a digital library. Finally the game players and recreational users engaged in MUDs and MOOs, web surfing and online multi-user games such as Quake or sports. Two other factors were also identified that tapped more general attitudes to the medium as a whole (iv) a negative family contact factor, and (v) a trust factor. The trust factor identifies a separate orientation to the Internet, which deals with how far people see it as a safe way to send and receive information (see Table 2 for items and factor scores). The analysis was repeated in each of the four countries separately and the same three 'types' of user were identified. Factor scores were then used to create new variables (facsoc, facutil, and facgames) that served as measures of the different types of user.

These findings develop a more complex picture of Internet users than anticipated. Rather than there being active and passive users, most of those using the Internet appear to be engaging in particular activities, albeit of different types. Given the profiles that have emerged, therefore, we moderate Hypothesis 4 to incorporate the results of the exploratory factor analysis. A second causal model is presented in Figure 2 below to clarify the new set of relationships.

Online socialising, given its stress on community building and forming new relationships is expected have the strongest positive effect on levels of social capital. The other types of Internet use are also expected to have a positive impact on social capital, however. Game playing because it involves interaction with others in a recreational capacity. Utilitarianism is also anticipated to have positive effects on social capital due to the feelings of efficacy that it may generate or reinforce among individuals. Thus we restate Hypothesis 4 as follows:

H4 (revised): If Internet connectedness increases individuals levels of social capital then these effects will be strongest among online socialisers, compared to utilitarian and game-playing users of the Internet.

Figure 2: Causal Model 2 – Social Capital, Technological Connectedness and Political Participation for the Different Users Types



Controlling for Demography & Socio-economic Status

While Internet use is widening by the month there still remain significant differences between individuals' Internet access and their use of it. In particular, education and age still reportedly have a strong impact on levels of Internet use while gender, income and race, are all reportedly declining in

significance (Nie & Ebring, 2000). The demographic variables included in the analysis were education, employment status, age, and gender. Race was only available for US respondents.^{xi}

To summarise, therefore, in this analysis we test two causal models of the relationship between Internet use and levels of social capital and political participation. Model 1 (see Figure 1) uses a single indicator of Internet connectedness that simply measures the overall length of time the respondent has been using the Internet, and relates this to levels of social capital and political participation. Model 2 (see Figure 2) splits Internet connectedness into three user types and examines the relationship between each type and levels of social capital and political participation. The models were tested using structural equation modeling (SEM) with AMOS 4.0 software in each of the four countries.

Findings & Results

Goodness of Fit

The results for the basic Model 1 for each country are reported in Figures 3 to 6 and the results for Model 2 in Figures 7 to 10. Only parameters that achieve statistical significance at the .05 level are reported on the Figures. The parameters reported are the standardised estimates. The indicators of goodness of fit for each of the analyses are presented in Table 3 (non-normed χ^2 and df, GFI, AGFI, RMSEA, and CFI). Overall these statistics show that our models fit reasonably well, with Model 2 achieving slightly better scores than Model 1. The obvious exception are the χ^2 statistics which are extremely large, particularly for the US. This is to be expected, however, since χ^2 is sensitive to sample size. As the sample size increases the standard errors of the estimates become very small, thus, the probability of finding significant difference between the sample covariance matrix and the estimated population covariance matrix is increased (Pedhazur, 1997: 818-9; Tabachnick and Fidell, 748; Bentler, 428). Given that all of our samples exceed 500 and in one case is over 15,000 such a problem is clearly encountered in our analysis.

Hypothesis Testing

In general, while the overall goodness of fit of our models is important from a general theoretical standpoint, it is the parameter estimates within and between the models that is of more immediate interest in terms of our hypothesis testing.

Overall the results reported in Figures 3 to 10 show consistent support for Hypothesis 1, that those people with high levels of social capital participate more in politics. This holds true regardless of country of origin. In terms of Hypotheses 2 and 3, while the latter is not supported in any of our models, the former is supported, with some cross-country variation. Specifically, none of our analyses show use of the Internet to have a significantly negative impact on levels of social capital (Hypothesis 3). Internet use is positively and significantly linked with levels of social capital in Canada and the US (Hypothesis 2). In addition, however, it would appear in the US (Figure 6), Internet use has a direct and negative impact on political participation, independent from its mediated effects through social capital. We return to this conundrum below.

The results for Model 2 (in which Hypothesis 4 is tested) reveal a far more interesting picture of the relationship between Internet connectedness and social capital. While no relationship was found between Internet use and individual's social and political attitudes and behaviour in the UK and Australia, once the different dimensions of Internet use are introduced, a positive relationship does emerge. For the UK (Figure 9), Hypothesis 4 is supported in that online socialising has the strongest positive effect on social capital. This is also the case in Canada, where both online socialising and utilitarian uses of the Internet are linked to higher levels of social capital. The standardised betas reveal socialising to have a marginally more significant effect than utilitarianism. In Australia, however, Hypothesis 4 is disconfirmed. Internet use is linked to rises in social capital, however, the link is strongest between Internet utilitarianism and game playing. Finally, in the US all three types of Internet use are positively and significantly linked to individual stocks of social capital. However, these effects are far stronger for utilitarians than for socialisers and game players (as indicated by the beta weights). Interestingly online socialising is the only type of Internet use that does have an independent significant effect on political participation, however, this is in the negative direction. Thus, while online socialising may lead to higher levels of offline socialising and civic engagement in one's community, it appears to make one less likely to engage in specifically political organisations and activities.

Interpretation

Overall these findings indicate that in Western industrialised nations at least, the more one uses the Internet, the more positive one feels towards one's community, and the higher one's levels of civic engagement and degree of social connectedness in the 'real world'. More specifically, it is utilitarian use of the Internet that is most consistently linked to increases in social capital in these countries, although online socialising and recreation also have positive effects in most cases.

This link between online functionalism and social capital may be explained in part by the profile of utilitarians compared with socialisers and game players. The parameter estimates from the structural equation models (reported in Figures 7 – 10) reveal that while all three user types are more likely to be male, utilitarians are more likely to be older, employed and more highly educated than socialisers and game players are. Thus, those using the Internet for more practical purposes are higher in the 'individual capital' that is predictive of social capital. These socio-economic and demographic factors are controlled for, however, so there is still clearly some additional effect of using the Internet on social capital that is being captured in these models. Indeed given the profile of game players as younger males, with less education and not in full-time work, one might expect this group, all things being equal to display a negative relationship to social capital. The fact that the relationship is positive indicates that Internet use may actually be countering or moderating the effects of low stocks of individual capital among this group.

In addition, another way to explain these results maybe that online socialising, as Putnam (2000) has commented in his recent book, leads to a virtual world of "easy in, easy out" "drive-by" relationships. Computer-mediated communication in these online communities makes entry and exit too easy, meaning that "commitment, trustworthiness, and reciprocity will not develop." (177). Thus, online socialising may build up only limited stocks of social capital

Another way to interpret these findings is to consider the role of time in these countries experience of Internet use. As Table 1 revealed, the UK, as of late 1999 had the lowest level of experienced Internet users, Australia was slightly higher and Canada and the US reported the highest. Thus, it maybe that the findings in Britain of a link between online socialising and social capital point to an evolution in peoples

use of the Internet. Individual's initial use of the Internet involves experimentation with its social capacities but over time they develop to make more functional uses of the medium. Supporting this link between a 'graduation' of Internet use from playing and socialising to more practical uses over time are factor analysis results which show the variable measuring duration of Internet use loading strongly and positively on the utilitarian factor. Thus, while all types of Internet use may breed higher levels of social capital, these effects will be most notable in utilitarians, since they will come to form the dominant type of Internet users in a society. The Canadian data indicates that the pattern may not hold true for all countries since it has a high number of experienced users, but reports a stronger impact of online socialising on social capital. The impact of online socialisers, however, is only very slightly greater than utilitarian users.

Conclusion: Cross-Case Comparison

Fears that the Internet has a broad negative effect on social capital and political participation appear to be unfounded. Using structural equation modeling on the Survey2000 dataset, we find no significant negative effect of connectedness on social capital, a negative effect of connectedness on political participation in the United States except when mediated by social capital, and different degrees of positive effects of connectedness on both social capital and political participation varying by Internet user and by country (Table 4).

Further research should explore other possible relationships between connectedness, social capital and political participation, since neither feedback nor suppressed relationships were investigated in this paper. Although the Survey2000 dataset was extremely rich, panel surveys would probably yield data that more clearly represents social change over time. However, the utility of cross-country comparison remains clear: if the social role of the Internet in the United States and Canada anticipates changes happening in Australia and the UK, then further comparison may help us understand subtle differences in the relationship between connectedness, social capital and political participation in societies with different political systems, political cultures, levels of connectedness, and degrees of economic development. Moreover, this paper has shown the utility of breaking down the stereotypical 'internet user' into meaningful categories that reflect the motivations people have for communicating with one

another. Researchers need to be wary of blanket assertions about the damaging impact of the new media on social and political life.

While this paper has concentrated on relationship between the Internet and individual attitudes and behaviour, the response of democratic institutions and political organizations is important in shaping such attitudes. Though we found that “connectivity” can increase social capital and political participation, existing democratic institutions should not assume that technology alone drives these positive effects. To build on the potential benefits of Internet use, our political institutions and organizations have to engage citizens with the technology. As the data indicate, people’s approach to new communications technology is evolving and a more utilitarian use of the Internet may be emerging. Citizens may become more demanding of democratic institutions and organisations by expecting more information, rapid personal responses, and more opportunities for input of their concerns and opinions. If such opportunities are not forthcoming from traditional political institutions, then the public may well look to alternative forms of participation in which to maintain their democratic values. In short, the technology itself is neither inherently democratic nor undemocratic – much depends on how existing institutions harness its potential.

REFERENCES

- Alexander, Cynthia and Pal, Leslie. 1998. *Digital Democracy: Policy and Politics in the Wired World*, Oxford: Oxford University Press,.
- Allen, Graham. 1995. "Come the Revolution", *Wired*, September : 46-48.
- Barber, Bernard. 1983. *The Logic and Limits of Trust*, New Brunswick, N.J.: Rutgers.
- Barber, Benjamin. 1984. *Strong Democracy*, Berkeley, CA University of California Press.
- Barber, Benjamin., Mattson, Ken. and Peterson, John. 1997. *The State of Electronically Enhanced Democracy: A Survey of the Internet*, a report for the Markle Foundation, Walt Whitman Center for Culture and Politics of Democracy, New Brunswick, NJ.
- Bentler, P. M. 1980. 'Multivariate Analysis with Latent Variables: Causal Modeling.' *Annual Review of Psychology*. 31: 419-56.
- Bimber, Bruce. 1998. "Toward an Empirical Map of Political Participation on the Internet". Paper presented to American Political Science Association Conference, 3-6 September, Boston.
- Brown, Robin, and Svennevig, Michael. 1999, 'Waiting for the Great Leap Forward? New Information Communications Technologies and Democratic Participation', paper presented to the UK Political Studies Association, 23-25 March, Nottingham.
- Citrin, Jack and Green, Donald Philip. 1986. "Presidential Leadership and the Resurgence of Trust in Government." *British Journal of Political Science* 16: 431-53.
- Coleman, Stephen. 1999. 'Can the New Media Invigorate Democracy?', *Political Quarterly*, vol. 70 (2): 16-22.
- Curtis, James and Grabb, Edward. 1992. "Voluntary Association Membership in Fifteen Countries: A Comparative Analysis." *American Sociological Review* 57: 139-152.
- Dahl, Robert. 1971. *Polyarchy: Participation and Opposition*, New Haven: Yale University Press.
- Diamond, Larry. 1993. *Political Culture and Democracy and Developing Countries* Boulder, CO: Lynne Rienner.
- Dizard, Wilson. 1997. *MegaNet: How the Global Communications Network Will Connect Everyone on Earth*, Westview Press, Boulder, CO.
- Doppelt Jack and Ellen Shearer. 1999. *Nonvoters: America's No-Shows*. Sage Publications,
- Dyson, Esther. 1997. *Release 2.0: A Design for Living in the Digital Age*, New York: Broadway.
- Evans, Peter. 1996. "Government action, social capital, and development: reviewing the evidence on synergy." *World Development* 24 (6), 1122.
- Feldman, Stanley. 1983. "The Measurement and Meaning of Trust in Government." *Political Methodology* 9: 341-54.
- Fellmeth, A. 1996. "Social Capital in the United States and Taiwan: trust or rule of Law?" *Development Policy Review* 14,.
- Fox, Jonathan. 1996. "How Does Civil Society Thicken: The Political Construction of Social Capital in Rural Mexico." *World Development* 24 (6): 1089-1103.

- Freeman, Roger. 1997. *Democracy in the Digital Age*, Arguments 16, Demos: London.
- Fukuyama, Francis. 1995. *Trust: The Social Virtues and the Creation of Prosperity* New York: Free Press.
- Gambetta, Diego. 1988. *Trust: Making and Breaking Cooperative Relationships* (New York: Basic Blackwell.
- Granovetter, Mark. 1985. "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology* 91: 481-510.
- Gibson, Rachel. and Ward, Stephen. 1999. 'Political Participation and the Internet in Europe: Who Wants and Wants-Not to Engage in Online Debate', paper presented to the UK Political Studies Association, Nottingham 23-25 March.
- Gerschenkron, Alexander. 1962. *Economic Backwardness in Historical Perspective* Cambridge: Cambridge University Press.
- Harrison, Lawrence. 1992. *Who Prospers? How Cultural Values Shape Economic and Political Success*, New York: Basic Books.
- Heller, Patrick. 1996. "Social Capital as a Product of Class Mobilization and State Intervention: Industrial Workers in Kerala, India." *World Development* 24 (6): 1055-1071.
- Hirschman, Albert. 1958. *The Strategy of Economic Development*, New Haven: Yale University Press.
- Hughes, John and Kevin Hill. 1998. *Cyberpolitics: Citizen Activism in the Age of the Internet*. Lanham, MD: Rowman and Littlefield.
- Inglehart, Ronald. 1990. *Culture Shift in Advanced Industrial Countries*, Princeton, NJ: Princeton University Press.
- Inglehart, Ronald. 1997. *Modernization and Postmodernization: Cultural, Economic and Political Change in 43 Societies*, Princeton, NJ: Princeton University Press,.
- Inkeles, Alex and Smith, David. 1974. *Becoming Modern: Individual Changes in Six Developing Countries*, Cambridge: Harvard University Press.
- Jackman, Robert and Miller, Ross. 1996. "The Poverty of Political Culture." *American Journal of Political Science* 40: 697-716.
- Johnson, Chalmers. 1982. *MITI and the Japanese Miracle*, Stanford, Ca: Stanford University Press.
- Leonard, Andrew. 1997. *Bots: The Origin of New Species*, Hardwired, San Francisco, CA.
- Luhmann, Niklas. 1988a. "Familiarity, confidence, trust: Problems and Alternatives" in Gambetta. New York: Basic Blackwell.
- McDonough, Peter, Barnes, Samuel, & Lopez, Antonio Pina. 1986. "The Growth of Democratic Legitimacy in Spain." *American Political Science Review* 80: 735-760.
- Miller, Arthur and Borrelli, Stephen.. 1991. "Confidence in Government During the 1980s." *American Politics Quarterly* 19: 147-73.
- Mishler, William and Rose, Richard. 1994. "Trajectories of fear and hope: the dynamics of support for democracy in Eastern Europe." *Comparative Political Studies* 28 (4).
- Mishler, William and Rose, Richard. 1997. "Trust, distrust, and skepticism: popular evaluations of civil and political institutions in postcommunist society." *Journal of Politics* 59(2): 418-451.
- Moore, Barrington.. 1967. *Social Origins of Dictatorship and Democracy*, Boston, Mass.: Beacon Press.

- Mulgan, Geoff. and Adonis, Anthony. 1994. 'Back to Greece: the Scope for Direct Democracy', *Demos Quarterly*, vol. 3, pp. 2-9.
- Muller, Edward and Seligson, Mitchell. 1994. "Civic Culture and Democracy: The Question of Causal Relationships." *American Political Science Review* 88: 635-52.
- Narayan, Deepa and Pritchett, Lant. 1995. "Cents and sociability: household income and social capital in rural Tanzania." *World Bank Mimeo*, August 20.
- Negroponte, Nicholas. *Being Digital*, Alfred A Knopf, New York, NY.
- Nie, Norman H. and Lutz Erbring. 2000. 'Internet and Society: A Preliminary Report.' Stanford Institute for the Quantative Study of Society.
- Norris, Pippa. 1998. "Who Surfs? New Technology, Old Voters and Virtual Democracy in America". Paper presented to the John F. Kennedy Visions of Governance for the Twenty First Century Conference, Bretton Woods, 19-22 July.
- Norris, Pippa. 1999. 'Who Surfs Café Europa? Virtual Democracy in the US and Europe', paper presented to the Annual Meeting of the American Political Science Association, 1-5 September, Atlanta, GA.
- Norris, Pippa. 2000. *Virtuous Circle: Political Communication in Post Industrial Democracies*, Cambridge University Press, Cambridge.
- Pedhazur, Elazar. 1997. *Multiple Regression in Behavioral Research: Explanation and Prediction*. 3rd ed. New York: Harcourt Brace.
- Polanyi, Karl. 1985. *The Great Transformation*, Boston: Beacon.
- Putnam, Robert. 1993a. "The prosperous community: social capital and public life." *The American Prospect* 38,.
- Putnam, Robert. 1993b *Making Democracy Work: Civic Traditions in Modern Italy* Princeton, NJ: Princeton University Press.
- Putnam, Robert. 1995a. "Bowling Alone: America's Declining Social Capital." *Journal of Democracy* 6: 65-78.
- Putnam, Robert. 1995b. "Tuning In, Tuning out: The Strange Disappearance of Social Capital in America." *Political Science and Politics* 28: 664-83.
- Putterman, Louis. 1995. "Social Capital and Development Capacity: The Example of Rural Tanzania." *Development Policy Review* 13: 5-22.
- Resnick, David. 1999. 'The Normalization of Cyberspace', in Chris Toulouse and Tim Luke (eds), *the Politics of Cyberspace*, London: Routledge, 48-68.
- Rheingold, Howard. 1993. *Virtual Community: Homesteading on the Electronic Frontier*, Addison-Wesley Pub, Reading, Mas.
- Schiller, Herbert. *Who Knows: Information in the Age of the Fortune 500* (norwod, nj, ablex press 1981), Ablex Press, Norwood, NJ, 1981.
- Schumacker, Randall E. and Richard G. Lomax. 1996. *A Beginner's Guide to Structural Equation Modeling*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- Seabrook, John. 1997. *Deeper: My Two-Year Odyssey in Cyberspace*, Simon & Schuster, New York, NY.
- Swank, Duane. 1996. "Culture, Institutions, and Economic Growth: Theory, Recent Evidence, and the Rise of Communitarian Politics." *American Journal of Political Science* 40: 660-679.
- Teixeira, Ruy. 1992. *The Disappearing American Voter*, Washington, DC: Brookings Institution.
- Tabachnich, Barbara G. and Linda S. Fidell. 1996. *Using Multivariate Statistics*. 3rd ed. New York: Harper Collins.

- Verba, Sidney and Almond, Gabriel.. 1989. *The Civic Culture*, Princeton, NJ: Princeton University Press.
- Verba, Sidney and Schlozman, Kay Lehmann. 1995. *Voice and Equality: Civic Volunteerism in American Politics*, Cambridge: Harvard University Press.
- Wade, Robert. 1982. "The System of Administrative and Political Corruption: Canal Irrigation in South India." *Journal of Development Studies* 18 (3).
- Wade, Robert. 1990. *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*, Princeton, NJ: Princeton University Press,.
- Winner, Langdon. 1992. "Democracy in a Technological Society".
- Witte, James and Howard, Philip. 1999. "Digital Citizens and Digital Consumers: Demographic Transition on the Internet" *Survey2000 Occasional Paper I*, August.
- Witte, James, Amoroso, Lisa and Howard, Philip. 2000. "Method and Representation in Internet-Based Survey Tools: Mobility, Community, and Cultural Identity in Survey2000," *Social Science Computer Review*, Summer Special Issue, 18(2).

TABLES & FIGURES

Table 1: Demographic and Social Profile of Survey2000 Sample

		Australia	Canada	UK	USA
First Internet Use (%)	Past month	3.6	2.9	5.3	3.2
	Past 6 months	12.3	6.3	11.9	6.7
	Past 12 months	10.9	9.3	12.3	8.1
	1 – 2 years ago	26.4	22.2	26.2	18.9
	2 - 3 years ago	25.0	25.9	19.0	23.5
	+ 3 years ago	21.8	33.5	25.4	39.6
Education (%)	High school	23.1	20.8	20.1	10.3
	Some college	31.7	37.7	24.3	31.1
	Undergraduate Degree	24.8	24.7	30.8	34.2
	Graduate degree	20.4	16.9	24.8	24.4
Gender (%)	Male	54.9	54.7	63.2	49.7
	Female	45.1	45.3	36.8	50.3
Employment (%)	Employed (f/p-t)	79.6	75.8	83.9	79.6
	Non-employed	20.4	24.2	16.1	20.4
Age (%)	16 – 24 yrs	26.7	21.6	22.1	15.4
	25 – 34 yrs	29.2	29.0	41.1	28.0
	35 – 44 yrs	21.8	23.6	22.0	24.7
	45 – 59 yrs	18.9	21.4	13.8	25.7
	60 yrs +	3.4	4.4	1.1	6.2
Sample Size (N)		804	2,215	733	16,088

Table 2: Factor Analysis of Internet User Types

Variables	Socialize	Utilise	Family	Games	4Trust
1. I feel a sense of community with the people I've met on the internet.	.847				
2. I have made new friends by meeting people on the Internet.	.851				
3. The Internet has brought my immediate family together.			-.883		
4. The internet has brought my extended family closer together.			-.887		
5. Talking with people on the Internet is as safe as communicating with people other ways.	.382				.627
6. The Internet has allowed me to communicate with all kinds of interesting people I otherwise would never have interacted with.	.785				
7. The Internet isolates people from one another					-.545
8. I feel I belong to an online internet community.	.789				
9. Information on the Internet is as trustworthy as information from television and newspapers.					.757
10. I can find people who share my exact interests more easily on the Internet than I can in my daily life off-line.	.612				.372
11. Duration of time respondent used the Internet		.643			
12. Send Receive Email?		.667			
13. Take Part in Mailing Lists?	.381	.702			
14. Access digital libraries, newspapers, magazines?		.704			
15. Take online college courses/pursue educational opportunities?		.406			
16. Purchase products/services?		.562			
17. Surf Web for recreation?		.562		.402	
18. Participate in Usenet groups?	.347	.519		.365	
19. Engage in chat groups and IRC?	.546			.613	
20. Visit MUDs, MOOs, MUSHs?				.792	
21. Play multi-user online games (Doom, Quake)?				.740	
22. Engaged in political discussion on the Internet?	.472				

Questions 1) to 10) were coded on a Likert scale 1 = strongly disagree to 7 = strongly agree. Question 11) was coded on a Likert scale. Respondents were asked when the first time they used Internet was: 1 = this is the first time, 2 = sometime in the past month, 3 = sometime in the past 6 months, 4 = sometime in the past 12 months, 5 = 1-2 years ago, 6 = 2-3 years ago, 7 = more than 3 years ago. Questions 12) to 21) asked how often respondents engaged in the activity and were coded on a Likert scale 1 = never, 2 = rarely, 3 = about monthly, 4 = about weekly, 5 = a few times a week, 6 = daily. Question 22) was coded dichotomously, 1 = yes had done 0 = no response.

Table 3: Goodness of Fit Measures for Models 1 & 2 by Country

	χ^2 / df	GFI	AGFI	RMSEA	CFI
Model 1					
Australia (n = 804)	481.3 / 96	0.93	0.89	0.07	0.78
Canada (n = 2,215)	704.4 / 92	0.96	0.94	0.05	0.85
UK (n = 733)	542.0 / 98	0.91	0.88	0.08	0.69
US (n = 16,088)	4584.4 / 89	0.97	0.95	0.06	0.85
Model 2					
Australia	503.2 / 119	0.93	0.89	0.06	0.81
Canada	764.6 / 117	0.96	0.95	0.05	0.87
United Kingdom	547.3 / 123	0.92	0.88	0.07	0.72
United States	5032.7 / 109	0.97	0.95	0.05	0.86

Table 4: Social Capital, Internet Connectedness & Political Participation: A Four-Country Study

SEM Effect	User Type	Australia	Canada	UK	US
Connectedness on Social Capital	General User		0.05		0.10
	Socialisers		0.10	0.15	0.05
	Utilitarians	0.14	0.09		0.12
	Game-Players	0.13			0.06
Connectedness on Political Participation	General User				-0.02 -
	Socialisers				-0.02 -
	Utilitarians	0.08			
	Game-Players				
Social Capital on Political Participation	General User	0.77	0.73	0.50	0.77
	Combined Socialisers, Utilitarians and Game-Players	0.54	0.72	0.60	0.77

Note: Empty cells indicate no statistically significant relationship.

Figure 3

Model 1: Testing the impact of length of time using the Internet on Social Capital and Political Participation.

significant — not sig - - - - -

Australia: $\chi^2 = 481.3$ AGFI = 0.89
df = 96

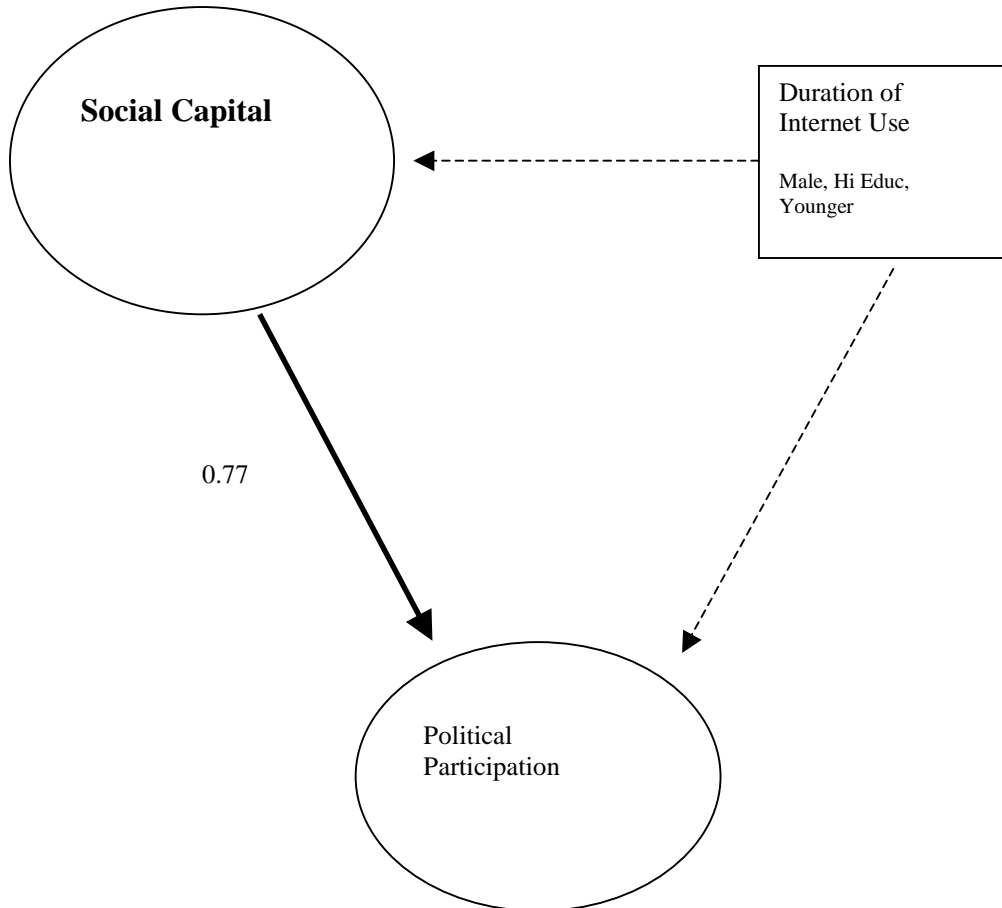


Figure 4

Model 1: Testing the impact of length of time using the Internet on Social Capital and Political Participation.

significant — not sig - - - - -

Canada: $\chi^2 = 704.4$ AGFI = 0.96
df = 92

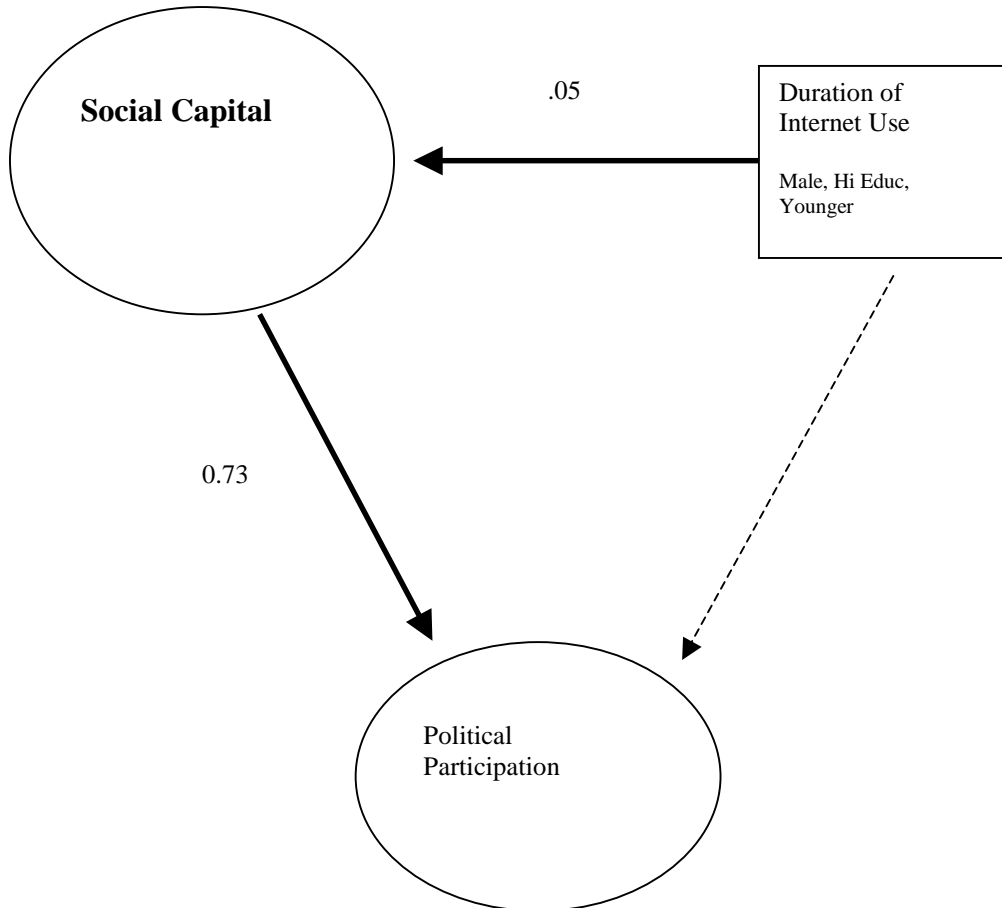


Figure 5

Model 1: Testing the impact of length of time using the Internet on Social Capital and Political Participation.

significant — not sig - - - - -

UK: $\chi^2 = 542$ AGFI = 0.88
df = 98

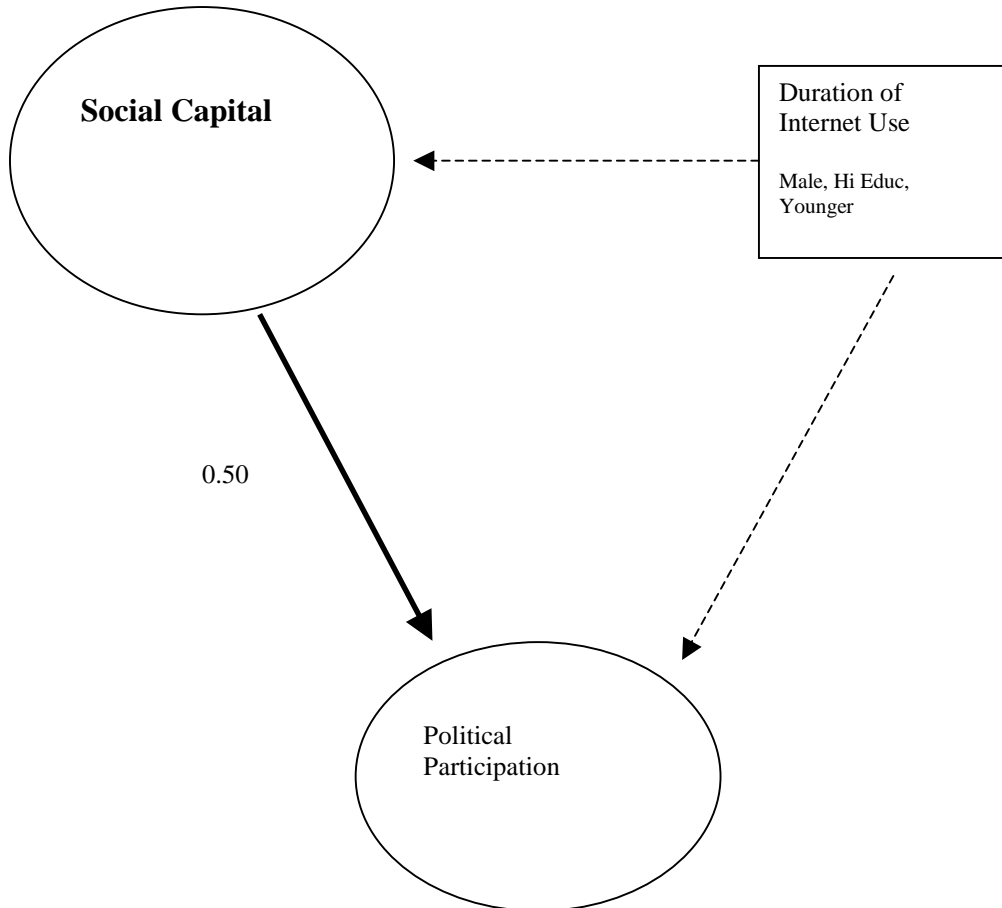


Figure 6

Model 1: Testing the impact of length of time using the Internet on Social Capital and Political Participation.

significant — not sig - - - - -

US: $\chi^2 = 4584.4$ AGFI = 0.95
df = 89

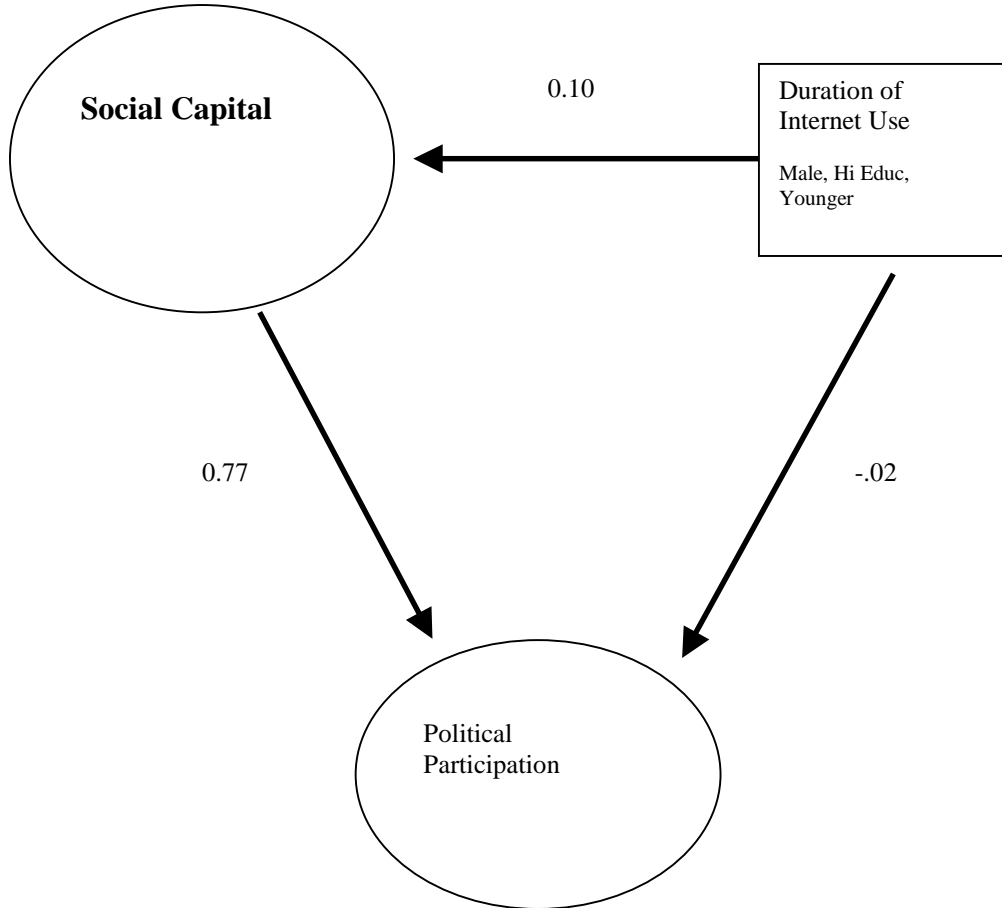


Figure 7

Model 2: Testing the impact of types of Internet use on Social Capital and Political Participation.

Australia: $\chi^2 = 503.2$ AGFI = 0.89
df = 119

significant **—————** not significant **-----**

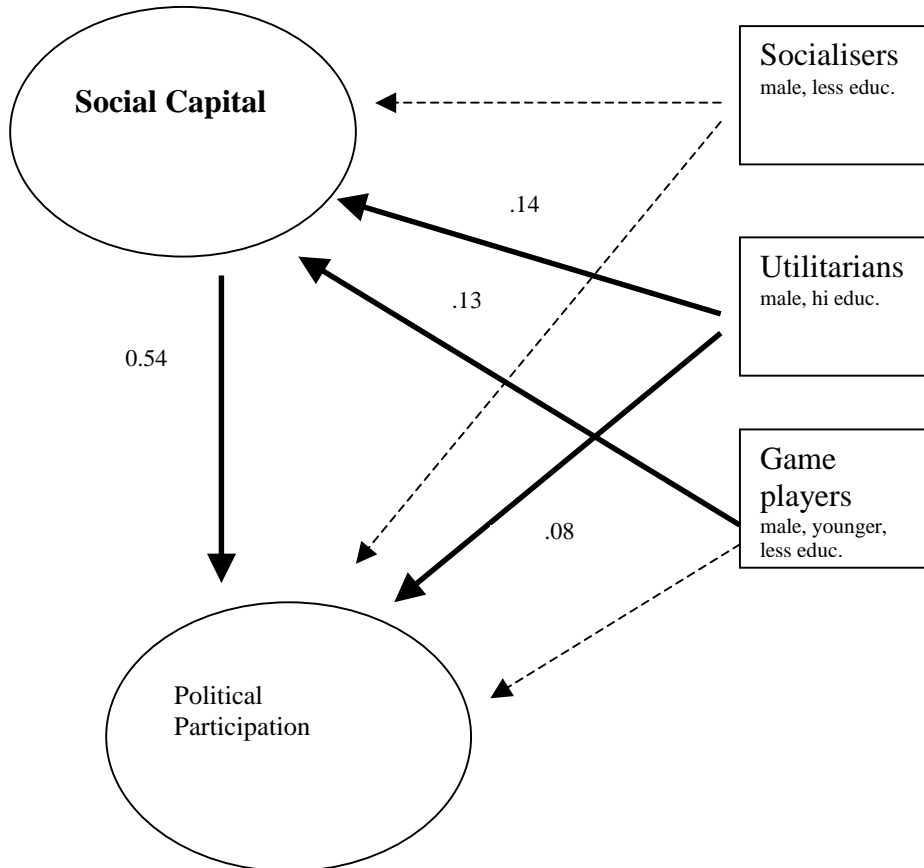


Figure 8

Model 2: Testing the impact of types of Internet use on Social Capital and Political Participation.

Canada: $\chi^2 = 764.6$ AGFI = 0.95
df = 117

significant ——— not significant - - - - -

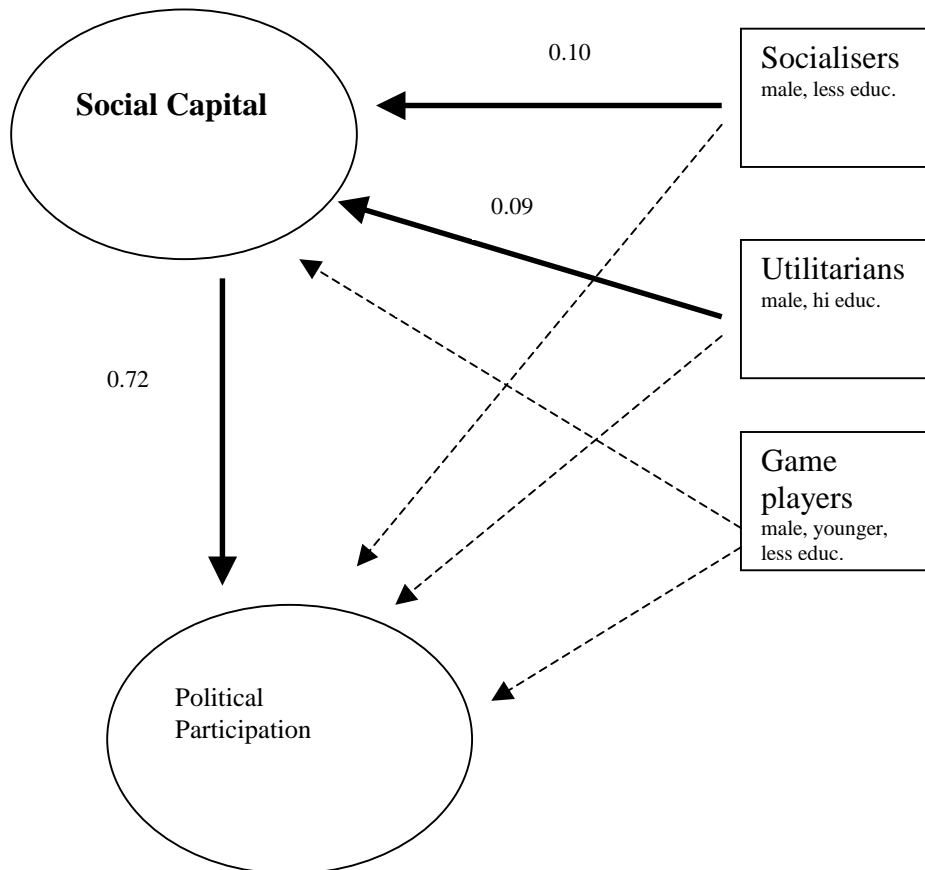


Figure 9

Model 2: Testing the impact of types of Internet use on Social Capital and Political Participation.

significant — not sig - - - - -

UK: $\chi^2 = 547.3$ AGFI = 0.88
df = 123

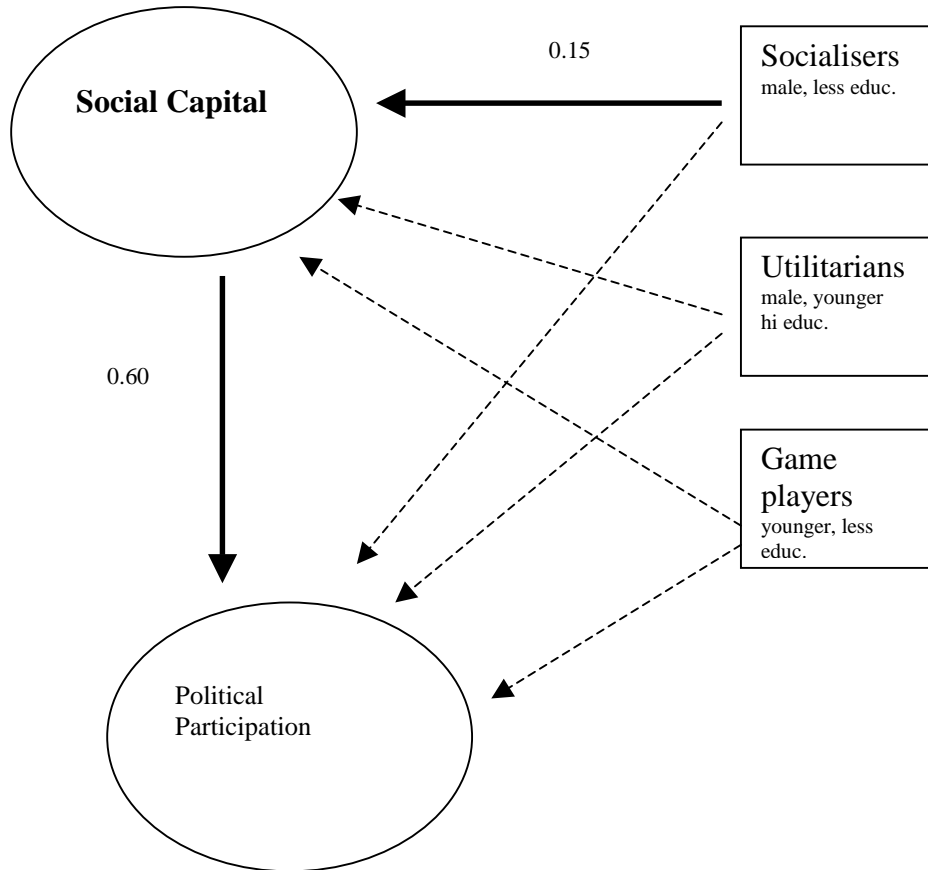
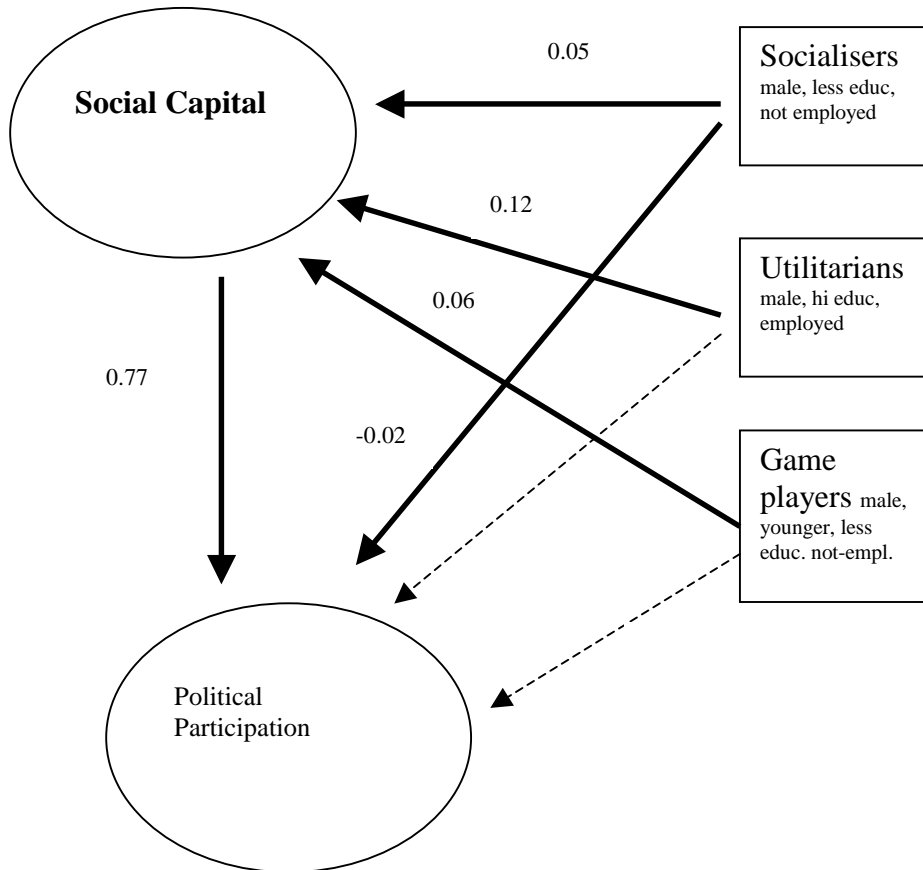


Figure 10

Model 2: Testing the impact of types of Internet use on Social Capital and Political Participation.

significant — not sig - - - - -

US: $\chi^2 = 5032.7$ AGFI = 0.95
df = 109



APPENDICES

Appendix 1: Factor Analysis Scores¹

Table 1: Political Participation Factor Loadings

Variable	Factor 1	Factor 2
Signed a petition	.736	-
Attended a public/town meeting	.703	-
Written an elected govt. representative	.676	-
Attended a political rally/speech	.568	.509
Served on a local organisation committee	.524	.485
Worked for a political party	.340	.720
Member of a group for better government	.514	.540
Held or run for political office.	-	.707

Table 2: Civic Engagement Factor Loadings

Variable	Variable loading
Service Clubs	.579
Hobby/Garden Club	.450
Environmental Groups	.553
Community/Neighbourhood Gps	.626
Social Advocacy Groups	.646
Literary/art Groups	.553
Professional/Academic Socs.	.522

The question asked whether respondents participated in the groups as an “active member” (defined as holding a leadership position, contributing money beyond regular dues, or regularly attending meetings), a member or not at all. For the index, active member and member were recoded as ‘1’, not at all remained as ‘0’.

Table 3: Social Connectedness Factor Loadings

Variable	Factor 1	Factor 1	Factor 3
Personal visits with friends < 30 miles	.881	-	-
Telephone/fax with friends < 30 miles	.870	-	-
Letter/cards with friends <30 miles	-	-	.879
Personal visits with friends >30 miles		.888	-
Telephone/fax with friends >30 miles		.899	-
Letter/cards with friends > 30 miles		.467	.808
Getting together with friends	.723	-	-

Questions 1 – 6 asked how often the respondent engaged in the activity, response categories were: never, rarely, several times a year, about monthly, about weekly, daily. For the index, never and rarely were recoded as ‘0’, several times a year to daily were recoded as ‘1’.

Question 7 asked how often the respondent got together with friends: never, sometimes, often. For the index never was recoded as ‘0’, sometimes and often was recoded ‘1’.

¹ For all factor analyses the Extraction Method was principal component analysis and the rotation method oblimin with the Kaiser Normalization. All scores of .350 and higher are reported.

Table 4: Community Support Factor Loadings

Variable	Factor 1	Factor 2
1) I feel close to other people in my community	-	-.902
2) My community is a source of comfort	-	-.901
3) People who do a favour expect nothing in return	.621	-
4) I have something valuable to give to the world	.454	-
5) The world is becoming a better place for everyone	.653	-
6) I believe that people are kind	.732	-

Respondents were asked how far they agreed with the statement, response categories were: (1) strongly agree, somewhat agree, agree a little, don't know, disagree a little, somewhat disagree, strongly disagree (7). For the index the scores were recoded so strongly agree = 7 and strongly disagree =1. The scores were added together to form the community support variable. Note the negative loadings result from the scaling of disagree as the highest score.

ENDNOTES

ⁱ Of course, it is most likely that they occur in tandem and ordering them is silly. See Swank, 1996 on how they interact in the new 'communitarian politics' and Muller, 1994 on the causal relationships between political culture and democracy.

ⁱⁱ Breaking social networks and destroying the social capital vested in a particular social system may have both positive and negative consequences. Whereas most of the state failures we have seen in the last 10 years have resulted in significant catastrophes for their populations, Moore has argued that the social cataclysm of revolution was necessary for the founding of the more stable democracies in the world today (Moore, 1967).

ⁱⁱⁱ Again, it may not be sensible to untangle these things. The best studies of social capital and development argue that the state needs public legitimacy and the public needs a stable state. See Narayan, 1997; Putterman, 1995.

^{iv} See *The Guardian G2*, 14 January 1999, pp. 6–7 and *The Guardian Online*, 10 June 1999, pp. 2–3; Pew Internet and American Life Project, *The Internet Life Report*, May 2000.

^v For further details about the logic of web-based survey instruments, program features, design elements and sampling issues with Survey2000, see James Witte, Lisa Amoroso and Philip Howard, "Method and Representation in Internet-Based Survey Tools: Mobility, Community, and Cultural Identity in Survey2000," *Social Science Computer Review*, Summer 2000 Special Issue, 18(2).

^{vi} Compared with 1996 GSS data there is only a slight overrepresentation of male respondents in Survey2000 (50% to 44%). The median age from the GSS was 44, the median age in this sample was 37.

^{vii} In the Survey2000 questionnaire respondents were given only one response category of 'Yes'. Non-response to this item was, therefore, coded as 'No'.

^{viii} Responses were recoded from the Survey2000 data that distinguished between non-members, members and active members, the last two response categories being collapsed into one. The organizations included on the civic engagement were compiled from factor analysis of a total of 19 organizations. All seven groups had a loading of .35 and above on the dominant factor (all other factors had eigenvalues of less than 1). Other groups with similar loadings were excluded if they would introduce an obvious demographic bias to the variable (i.e. youth, school service, fraternal organizations, see table 2 in the appendix for factor scores).

^{ix} The original variables were measured on a six point Likert scale indicating daily engaging in the activity to never and were recoded as dichotomous to create the additive scale. Factor analysis of the variables produced three factors: (1) within 30 miles (2) beyond 30 miles and (3) letter writing. Given that these distinctions were centered on geographic issues and mode of contact rather than substantive issues about social connectedness, it was considered valid to include them in one overall index (see table 3 in the appendix for factor scores).

^x The community support variables formed part of a larger battery of items dealing with respondents attitudes

toward social relations, views on human nature and whether the world is becoming a better place and how they saw their own role in it (powerless or effective). These variables were all originally measured on a seven point Likert scale indicating strong agreement to disagreement and were recoded to 0-4 for our additive scale. The community variables formed their own distinctive factor and were considered better indicators of the relational concepts of trust and reciprocity at the heart of social capital than were abstract ideas about human motivation and the nature of society in general (see table 4 for item factor scores).

^{xi} Education was measured on a 1 – 13 point scale for US respondents and 1 – 9 scale for non-US respondents indicating overall number of years of education. Employment status was measured as a dichotomous variable, 1 = employed full-time, part-time, and employed but unable to work currently due to illness or strike action; 0 = not employed (looking for work, not looking for work, military personnel, homemaker, retired persons). Sex was coded 0 = female 1 = male. Age was a continuous variable indicated by birth year.