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Identification with online and offline communities: Understanding ICT disparities in Finland

Matti Näsi [a,*], Pekka Räsänen [a], Vili Lehdonvirta [b,c]

[a] Economic Sociology, Department of Social Sciences, University of Turku, Turku FI-20014, Finland
[b] Helsinki Institute for Information Technology HIIT, PO Box 19215, FI-00076 Aalto, Finland
[c] Interfaculty Initiative in Information Studies, The University of Tokyo, Tokyo, Japan

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A B S T R A C T

Computers, mobile phones and other information and communication technologies (ICTs) have become a major part of the everyday life in affluent societies, yet significant socio-demographic disparities remain in their use. Young adults in particular continue to be much more active users of ICTs than the older generations. In this article we explore an approach to understand the institutional implications of ICT usage disparity: the socio-psychological significance of a technology to its users. We argue that identification mediated by technology is for many purposes at least as important of a measure as the actual quantity and quality of their use for many peer groups. Analyses of a nationally representative survey sample collected in 2009 ($N = 1202$) indicate that young Finns identify with online communities significantly more strongly than their elders do. Overall, however Finns identify much more with traditional offline formations.

1. Introduction

In the early 2000s the emerging new information and communication technologies (ICTs) prompted a variety of openings regarding the possible consequences of the new technological developments. Mark Prensky, for instance, laid a claim over a division between the young born into a "digital era", and those born earlier. According to this view, the young are fundamentally different from the old in terms of their technological abilities, communication skills and the way they are socialized, See Ref. [1,2].

It is true that the emergence of the new ICTs have resulted to a Western society more connected than ever before. These days' computers, mobile phones and the Internet serve as central means of communication, social interaction and entertainment, and the popularity of the new technology has played a prominent role in the rise of different online networks. According to statistics, young adults aged 16–34 years are by far the most active users of ICTs, but other age groups are becoming more and more involved. It thus appears that a type of ICT revolution took place after the turn of the millennia. The question is; what were the impacts? Even though Prensky's visions from nearly a decade ago appear somewhat exaggerated, it does not erase the fact that relatively little is still known from ICT impacts on a societal level.

In order to learn more of some of the possible impacts, we will draw from identification experience. The reason why identification can be seen as a valuable measure in examining the relationship between online and offline networks is because, "…identification with groups is important psychologically because it satisfies basic human motives of self-verification, self-evaluation, and epistemological clarity" [3; p. 116]. In other words, identification signals not only how we define ourselves, but also what we consider important in life. In addition to examining the

* Corresponding author. Tel.: +358 2 333 8841; fax: +358 2 333 5080.
E-mail address: matti.nasi@utu.fi (M. Näsi).

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traditional quality and usage of services, it is also important to examine the psychological experiences of using the different digital tools and services.

The birth and the growing popularity of social networking sites and other online "hangouts" reflect the role Internet plays in keeping friends and family connected. At the same time it also provides an interesting comparison with the more traditional offline communities in terms of social priorities and who people feel connected with. Offline communities tend to consist from more traditional networks, such as family and friends, work/study colleagues, members in hobby groups and neighbors. Online communities on the other hand tend to be vaguer in their description. Typically such communities consist of groups of users, who have agreed to interact and share information with each other through certain technical platforms such as *Facebook*, *MySpace*, *Twitter* or a more designated site for users sharing a particular interest. In a more traditional view such communities may include social networking sites, multiplayer online games, message boards etc. [4].

In this study we will examine how online and offline communities compare in terms of identification experiences. We will also take a closer look at which population segments seem to value online communities the most. By mirroring the differences between these communities, we aim to contribute to the current discussions over the impacts Internet and other ICTs may have had on the modern society.

Our data are derived from a Finnish survey data collected in 2009 ($N = 1202$). In the data identification with online and various offline communities is examined by respondents' age, gender, residence and education. Since our research is limited to a cross-sectional design, we treat age groups in this study as life-phase and generational categories. The article is structured as following; the first part provides a brief introduction to the concept of online and offline communities and the surrounding debate concerning the extent of the impact and importance of the Internet and ICT use. The next section takes a closer look at the relationship with friends and family in both online and offline contexts by questioning whether they are two separate environments or just mere extensions of one another and the significance of online identification in Finland. This is followed with chapters on data and methodology, results and conclusions.

2. Relationships and identification on the Internet

The notion of online vs. offline relationships plays an integral part in the debate concerning personal relationships, identification and the new ICTs, as many of the new technologies have served as influential factors in identity formation for many of the younger generations [5–7]. However, according to some arguments the sole impact of Internet and online communication are often exaggerated [8]. In fact, the most common online activities include; sending or receiving emails, online banking, searching for information regarding possible consumption decision as well as reading the news [9,10].

Previous studies comparing online and offline relationships tend to follow a specific pattern. The earlier studies voiced a concern over the possible negative impacts the new ICTs would have on sociability and social involvement [6], whereas the more recent studies reflected the Internet as a valuable tool in, not only maintaining the existing relationships, but also acquiring new ones [11]. The debate over the quality of these two types of relationships follows in similar lines. Again the earlier studies placed more value on the offline relationships, with the notion that online relationships tend to be more valuable when they serve as a supplement to the existing offline relationships [12,13].

However, online relationships did have some early support, mainly from studies focusing on members already active in specific online communities [14,15], although it is easy to argue that participants in these types of studies had a pre-existing position in terms of Internet as means of communication. A more recent study examining the differences between online and offline friendships indicated that participants classified in the study as "secure", "dismissive" and "preoccupied" tended to be more engaged with their offline friends. On the other hand participants classed as "fearful" engaged more in online relationships [16; pp. 565–566]. In general, however, it appears that online communication serves as both complementary mean for offline relationships, as well as tool for searching new acquaintances [17]. It seems that the driving force behind any apprehensiveness associated with digitalization relates to fear that the young people might loose their offline connections and identity.

Social scientists have demonstrated that group memberships and social networks remain a fundamental building block in society. Jobs, business deals and political influence are brokered in in-groups, giving an advantage to individuals who are members, and leaving those who are structurally excluded from such groups at a disadvantage [18,19].

Besides a societal building block, groups and communities are an important psychological anchoring point, providing individuals with a source of ontological security and self-esteem. According to the social identity theory [20], individuals make sense of their social environment by categorizing themselves and others into groups that can be contrasted with each other. This notion of contrasting groups is apparent in ICT user statistics; 83% of Finns were using the Internet in 2009. Out of the 83%, 80% use the Internet almost daily. The most recent statistics available on itemized use purposes were collected in 2008. According these data, 16–24 and 25–34-year-olds were by far the most active users of social networking sites (Facebook, MySpace etc.) and instant messaging or other similar tools [21].

Statistics referring the young adults as the most active ICT-users can also be interpreted using the identification perspective. One example comes from a recent study, which addressed the issue of how young people identify with their online and offline peer groups. According to the results, British, Spanish and Japanese youth active in an online community identify with their online peers almost as much as they identify with their family and even more than with their offline hobby groups [22]. In this sense the study suggests a degree of similarity between offline and

online identification experiences. However, one obvious limitation with research dealing with online community users is that it is difficult to conclude anything based on their results regarding the population in general.

In general it appears challenging to find reliable data or statistics on online usage, for instance one should always address statistics presented online with extreme caution as there are always details that fail to show (like multiple user accounts [popular in Facebook], false user information etc.). Web surveys tend to suffer from similar limitations of socioeconomic validity as the early telephone surveys in the United States did, referring to the lack of sampling frame (in this case web addresses) that represent a certain population groups [23; p. 200]. However, our data, derived from a national survey, provides a more general view on the statistics regarding identification in the modern digital society.

3. Research questions and hypotheses

The empirical part of this paper focuses on identification with online communities and more traditional social groups in Finland. We are particularly interested in exploring what kind of differences between different age groups exists, as well as how other socio-demographic factors connect with the strength of identification. In order to examine these issues, we summarized the following two research questions:

1) Are there differences in the strengths of identification between online and offline communities among Finnish adult population?

2) Are there distinct socio-demographic profiles of identification with an online community?

We expected to find considerable differences in the strengths of identification with online and offline social groups. First assumption was that online communities would not provide a strong source of identification for most Finns when compared to other basic social relationships, such as family, friends or colleagues. Second assumption was that considerable differences in the identification with online communities between various socio-demographic segments would exist.

The existing statistics as well as findings from previous studies show that Internet use frequencies and computer-mediated social interactions patterns differ between population groups. Age, in particular, can be held of particular importance here. A constant finding in earlier studies has been that younger adults generally identify more strongly with their peer circles than older people do. The reason for this is that the young tend to have different conceptions of their self-identities and social roles in everyday life than older people [22,24,25]. Similar assumptions can be made also in broader terms. It is clear that young adults use the new communication technologies the most and the elderly the least [26,27].

On the other hand we assumed there to be only minor gender differences in the identification patterns. Previous findings indicate that boys and girls share similar visitor frequencies for example in Habbo, Facebook, and many other online hangouts [6,25]. It was therefore feasible to expect that they would evaluate the virtual environments rather similarly in terms of identification experiences. Simultaneously, however, a relatively unchangeable gender difference has been reported indicating that men outnumber women as the frequent ICT users [28,29], thus we had an assumption that some differences between men and women could possibly exist.

Place of residence can also be a relevant factor when explaining differences in identification with online communities. Taking into account the differences between city centers and areas outside the center it is evident for instance that the former offers far more locales for free-time activities (shops, malls, cinemas etc.) than the latter. There may also be different kinds of people living in different types environments. Particular groups, such as ethnic minorities, professionals or artistic avant-gardes, come to live in certain areas and their lifestyles come to typify these areas and neighborhoods. On one hand, the need for identification with online communities could be weaker in urban areas, since they offer many other diversions and opportunities for social interaction. On the other hand, the need for identification with online communities could be weaker in rural areas, because they often feature closely-knit local communities, whereas densely populated urban areas can exhibit “urban anonymity” and lack of communication among proximate individuals [30,31].

In addition, effective use of the Internet in general, and many of its online hangouts and SNS in particular, requires understanding of foreign languages (typically English). In this sense we assumed that Finns’ identification experiences differ between educational categories. It has been reported in earlier studies that highly educated individuals use the Internet more often and for more versatile purposes than less educated ones [13,32]. Therefore, it is likely that individuals with high education identify more strongly with online communities compared to those with low education.

We also have to note that individuals’ perceptions on online communities might be somewhat vague. For example, an online community may refer to a given social networking service or application, while sometimes online communities are being established between users who mutually agree to interact with each other via certain technological application. It is likely that perceptions of online communities vary to some degree between active ICT users and less active ones. Acknowledging these issues, we aim at examining what kind of socio-demographic disparities there exist between identification experiences. In the remaining sections of this article, we use recent survey data to examine the research questions outlined above.

4. Data and methods

The data utilized in the study are derived from a Finnish postal surveys (“Finland 2009”), collected in autumn 2009. The survey used simple random sampling; the respondents’ home addresses were drawn from the Finnish population register database. The final response rate of the

survey was 49% ($N = 1202$). Despite a relatively modest response rate, the sample has been found to represent relatively well the citizens of Finland aged 18–75. In the analyses, a weight coefficient was applied in order to control minor bias in age and gender distributions [for a more detailed description, see Ref. [33]].

Subjective measures of identifications are used as dependent variables. The variables were elicited with the question: "How strongly do you feel part of the following groups?" A total of six items were displayed in the questionnaire for evaluation: a hobby group, an online community, residential neighborhood, colleagues at work or at school, friends, and family. Respondents gave their answers using a five-point Likert-type scale (ranging from 1 = "Not at all" to 5 = "Very much"). While no restrictions were given in the questionnaire, it is perhaps reasonable to assume that most of the respondents answered on the basis of their views relating to the circumstances of their daily life. In this way the interpretations of an online community or a hobby group, for instance, may vary between respondents. Nevertheless, possible ambiguities are taken into account in the interpretation of the results.

Independent background variables include four demographic variables: age, gender, residential area and education. Age was specified in the questionnaire as the year of birth, thus providing a continuous measure. In order to allow parallel comparisons with the other independent measures, age was categorized into six groups: 18–25, 26–35, 36–45, 46–55, 56–65, and 66–74. This categorization can be seen as reflecting a broad classification of the phases distinguished in adult life. The years from 18 to 25 are referred to often as early adulthood. Those aged 26–35 consist of young adults, and the next three age groups can be defined as early and late middle age. Finally, people over 65 years of age are characterized often as the elderly, since at this age the person is usually entitled to a pension. There are noteworthy problems related to the analysis of age, such as whether the phenomena discovered are related to certain life-cycle stage or whether they are actually typical of broader groupings, such as generations [34,35]. While acknowledging this, we treat age in this study as a life-phase and generational variable. After all, our analysis is based on utilization of cross-sectional data.

Residential area was measured simply by asking to choose their type of residential area, urban or non-urban. It can be argued that this variable reports unambiguously whether the respondent's residence is located in an urban or a non-urban setting. Education was measured in the data as vocational education. The classification used consisted of four categories: unskilled, vocational school, tertiary level and academic degree (Bachelor's degree [BA] or higher). This variable can differentiate the respondents' educational background by both skill level and qualification. A description of original questions presented in the questionnaire and coding of the independent and dependent variables are given in the Appendix.

The methods of analysis consisted of two different techniques: frequency analysis and analysis of variance. First, frequency analysis was used to give a descriptive overview of identification with various social groups in Finland. In addition, identification with an online community was compared across age groups.

The question addressed in the further analysis was whether variation in identification with an online community could be explained by the selected independent background variables. The statistical method used for this purpose was univariate analysis of variance (ANOVA). ANOVA is a generalized linear model and it provides a basic too of examining mean scores and their deviation from the overall mean of the different groups in the data [36]. It is thus a technique for determining statistical differences between the means of two or more populations. Our aim is to show the extent to which the selected independent variables explain the variances in the dependent variable. A more detailed description of the procedure will be given in connection with the explanatory analysis.

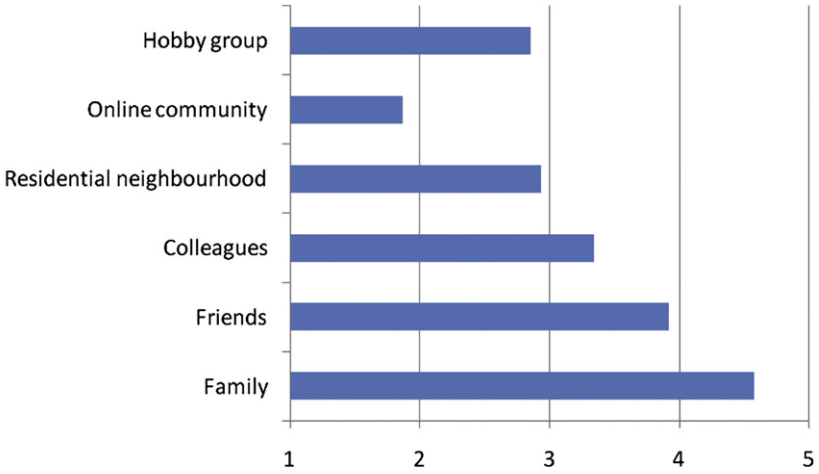
5. Results

In the past, individuals based their identities in only a handful of social contexts: at home, at work and school and in the company of close friends. This is no longer the case, since a majority of individuals use the Internet and have hobbies through which they connect to many social networks. This is to say that people now have many different groups to identify with. We take a look at this issue by examining the overall identification strengths in different social groups. In our questionnaire, the respondents were asked to evaluate how much they felt part of a total of six different groups, ranging from family and friends to the respondents' residential neighborhood. Fig. 1 shows average ratings for each item.

Figure shows that the family is the respondents' primary source of social identity. Respondents are also somewhat strongly identified with their friends and colleagues. On average, Finns feel more connected with family, friends, school and work colleagues, neighbors and hobby groups, than they do with online communities. This is an interesting finding in terms of recent theoretical discussions and empirical studies, which tend to report strong identification with online communities. However, our data consists of a nationally representative sample of adult Finns and not only of those who are active users' social media. Still, it is feasible to assume that almost all of the respondents knew what was meant with "an online community". Facebook was mentioned in parentheses after the question (see Appendix).

Preceding research literature suggests that there should be considerable differences between age groups when examining identification with online communities. This is because it is often young people who are spending most time on online hangouts [6,37]. Fig. 2 gives average ratings for online identification by age group.

Identification experiences clearly connect with respondents' age. In particular, there are differences between the mean of the youngest age group (18–25-year-olds, $M = 3.1$) and older respondents. It is also worth mentioning that the strength of identification decreases steadily when moving older age groups. Respondents aged 65 and over report very weak identification ($M = 1.4$). In fact, we may argue that only under 46-year-olds report notable identification



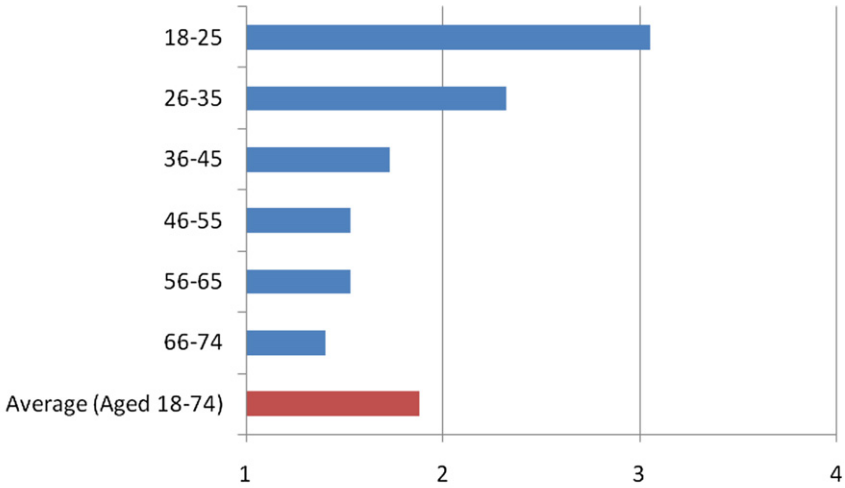
Note: Results represented as means (range of variables scaled from 1 to 5).

Fig. 1. Identification with different social groups.

with an online community. The mean ratings in the three youngest age groups are either close to or above a mean of 2.0. Given this, we decided to remove over 55-year-old respondents from the further analysis. Descriptive statistics for variables used in explanatory analysis are given in Table 1.

In the explanatory analysis our aim was to examine whether the differences between age groups would be significant when other independent background variables will taken into account. First, we examined the unadjusted main-effect of each independent variable. After that, we added each significant variable into the model, one variable at a time. ANOVA models are given in Table 2. In the table, the overall statistical significances are indicated by the value *F*. Parameter estimates (β) are used to approximate how much the means of the different categories of the independent variables deviate from the reference category (a). In addition, the proportions of total variance explained (Adj. R^2) are given separately for each model at the bottom of the table.

At first glance, each independent variable is connected with identification with an online community (at $p < 0.01$ level). The first column shows that age appears to be the strongest source of variance. As expected, the younger the respondent, the stronger the identification reported. Male respondents report somewhat weaker identification. With regard to residential area, on the other hand, respondents living in urban area report stronger identification. Finally, and perhaps surprisingly, differences between educational categories show that respondents with only primary



Note: Results represented as means (range of variables scaled from 1 to 5).

Fig. 2. Identification with an online community by age.

Table 1
Descriptive statistics for dependent and independent variables used in explanatory analysis.

Dependent variable	
Identification with an online group	394 (1.20)
Independent variables	
Age (years)	
18–25	20.1 (158)
26–35	25.5 (200)
36–45	25.7 (202)
46–55	28.8 (227)
Gender	
Male	50.9 (399)
Female	49.1 (385)
Residential area	
Urban	80.6 (597)
Non-urban	19.4 (143)
Education	
Primary	13.9 (100)
Vocational	32.9 (236)
Tertiary	24.1 (173)
BA or higher	29.2 (210)

Note: Percentages (number of cases in parentheses) represented for independent variables, means (standard deviations in parentheses) represented for dependent variable.

identification report strongest identification. We should of course bear in mind here that the youngest respondents in the data fall into this category, which may partly explain the observations here.

The first models report the effect of age. Age alone can explain 23 percent of variance, which is a considerable share. In the second model, gender was included. In practice, the differences between age groups remained the same, but the difference between male and female respondents increased slightly. This finding indicates that younger women are reporting the strongest identification with an online community. This model accounts for a total of 25% of variance. Needless to say, the effect of age is clearly stronger than the effect of gender.

The third and fourth models add the effects of residential area and education. Only minor changes can be observed when these variables were taken into account. This is to say that the differences between age groups, and men and women, weaken only slightly. With regard to the new variables included in the model, however, we are able to witness clear changes. In fact, the effects of both residential area and education are barely significant in the final model ($p < 0.05$). Despite this, urban dwellers report stronger identification with an online community than non-urban dwellers do. There is also a weak difference between the lowest and other educational categories. Explanatory proportions of the models remain at 25%.

Our empirical analysis was concluded by examining the possible interactions between independents. No significant interactions were found (at $p < 0.05$ level), which means that results obtained from the main-effects tests remain valid. Differences in identification with an online community can be attributed to primarily to respondents' age. Gender, education or place of residence appears to have only a marginal impact.

Table 2
Identification with an online community by socio-demographic variables. ANOVA models.

	Unadjusted main-effects	Model I	Model II	Model III	Model IV
Age (years), F	73.60***	73.60***	77.93***	68.97***	49.10***
18–25	1.53***	1.53***	1.57***	1.54***	1.48***
26–35	0.79***	0.79***	0.79***	0.80***	0.84***
36–45	0.21*	0.21*	0.22*	0.25*	0.23*
46–55	(a)	(a)	(a)	(a)	(a)
Gender, F	11.12**		24.97***	23.17***	15.80***
Male	−0.30**		−0.39***	−0.39***	−0.35***
Female	(a)		(a)	(a)	(a)
Residential area, F	11.93**			4.71*	5.14*
Urban	0.41**			0.22*	0.24*
Non-urban	(a)			(a)	(a)
Education, F	10.82***				2.86*
Primary	0.54***				0.34*
Vocational	0.18(ns)				−0.05(ns)
Tertiary	0.29*				0.10(ns)
BA or higher	(a)				(a)
Adj. R^2		0.23	0.25	0.25	0.25

Note: Results represented as unstandardized coefficients (β); *** = $p < 0.001$; ** = $p < 0.01$; * = $p < 0.05$; (ns) = $p > 0.05$; (a) = reference category.

6. Conclusions

Growing popularity of the new ICTs and the increasing Internet penetration rates in all age groups in the past decade, have raised questions over the possible impacts this might have on the society. In order to assess this we used identification between online and offline communities as a means of examining how digitalization mirrored relationships in different contexts. According to our findings, age is clearly the most significant factor in the identification process. Considerable generational differences in terms of identification exist, as the younger generations tend to have a stronger tendency towards identifying with online communities. Gender, education and residential area appear to have a less significant role. What is noteworthy, however, is that the more traditional offline communities, such as friends and family, hobby groups and neighbours are valued more at a population level.

The data utilized in this study consist of a fairly reliable, nationally representative postal survey data collected in 2009. In this sense one of the most important contributions of this article relates with the availability of reliable statistics of user percentages of different online and digital databases. Thus, it is evident that the results presented in this paper provide more certified view of online identification processes and user experiences, in particular those of focusing on Internet and social media. At the same time, however, we are not able to estimate differences in the strength of identification between those who visit online communities regularly and those who do not. While acknowledging this, we must bear in mind that the purpose of this article is in the socio-demographic profiles of identification with various social groups. In this way, the results show clearly that online communities do not offer a strong source of belongingness to Finnish adult population.

In the end of the day even the younger generations are not a homogenous group of digital experts, but rather groups of minorities with largely different levels of digital abilities and interests [37]. Thus it is possible to argue that the digital divide for instance, is largely based on socio-psychological experiences, rather than on ones digital abilities. In this sense our results are similar to those found in studies that focus on time usage and ICT.

We must maintain that as we are using cross-sectional data we cannot say for sure that the results indicate generational differences instead of just individuals' differing developmental phases, thus serving as an opening for further research. Naturally, our data focusing on one country alone should be compared to data from other countries.

Appendix

Original questions presented in the questionnaires and the coding of variables.

Variables	Original question	Original measurement	Coding
Identification variables	[How strongly do you feel part of the following group]: A hobby group, An online community [e.g. Facebook], Residential neighborhood, Colleagues [at work or at school], Friends, and Family.	Ordinal	1 = Not at all, 5 = Very much.
Age	What is your year of birth?	Continuous	Calculated from the year of birth and categorized: 1 = Under 18–25-years, 2 = 26–30-years, 3 = 36–45-years, 4 = 46–55-years, 5 = 56–65-years, 6 = 66–74-years.
Gender	Are you?	Dichotomous	1 = Male, 2 = Female.
Residential area	What type of residential area do you live in?	Dichotomous	1 = Urban, 2 = Non-urban.
Education	What is your education [please, indicate according to the highest qualification or degree earned]?	Categorical	1 = Primary, 2 = Vocational, 3 = Tertiary, 4 = Academic [BA or higher].

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Matti Näsi is a PhD student in Economic Sociology at the Department of Social Sciences at University of Turku, Finland. He holds a B.A. from University of Lincoln, UK and M.Sc from University of Turku. His doctoral dissertation focuses on the impacts of information and communication technologies (ICTs) on Finnish society between 1999 and 2009, with the emphasis on identification experiences, media use and elderly users.

Pekka Räsänen PhD (Econ. Soc.) is professor of Economic Sociology at the Department of Social Sciences at University of Turku, Finland. He has studied consumer behaviour and attitudes towards technological innovations for more than ten years. Räsänen has considerable experience in comparative research methods and in analysing of large-scale quantitative data. He has published widely in international scholarly journals (e.g. New Media & Society, The Information Society, and Information, Communication & Society). His current research focuses on the way that everyday life is affected by the new ICTs, ageing of the society, and the commercialisation of the media landscape.

Vili Lehdonvirta PhD (Econ. Soc.), M.Sc. (Tech.) works as a researcher at the Network Society research programme at Helsinki Institute for Information Technology (HIIT), Aalto University, Finland. He is currently a visiting scholar at the University of Tokyo. His research focuses on examining the social and economic impact of new information technologies, especially online games, social networks and mobile phones. Dr. Lehdonvirta's particular area of expertise is the materialistic side of digital environments: how people's behaviour is shaped by virtual currencies, game items and digital work. His work has also been published in host of international scholarly journals (e.g. Journal of Youth Studies, Media, Culture & Society, and Information, Communication & Society).