No. 28
Investigating Outcomes of Online Engagement

Alexander van Deursen, Jan van Dijk and Ellen Helsper

Alexander JAM van Deursen (a.j.a.m.vandeursen@utwente.nl) is an Assistant Professor at the Department of Media, Communication and Organization of the University of Twente in the Netherlands. His research focuses on digital inequality with specific attention to Internet skills. He consults public agencies on how to improve their service delivery by accounting for differences in Internet use.

Jan AGM van Dijk (j.a.g.m.vandijk@utwente.nl) is Professor of Communication Science and the Sociology of the Information Society at the University of Twente, the Netherlands. He is chair of the Department of Media, Communication and Organization and Director of the Center for eGovernment Studies at the same university.

Ellen J Helsper (e.j.helsper@lse.ac.uk) is Associate Professor at the Media and Communications Department of the London School of Economics and Political Science. Her research focusses on everyday (dis)engagement with Information and Communication Technologies and the tangible outcomes of digital skills and engagement for social groups with different resources. She consults widely for industry, the third sector, and local and international governments.

Investigating Outcomes of Online Engagement

- 2 -

Alexander van Deursen, Jan van Dijk and Ellen Helsper

ABSTRACT

So far, digital divide research and policy was primarily engaged with access to computers and the Internet. The results of having access to these digital media were neglected. This article focuses on the tangible outcomes of online access and activity. There have been few attempts to measure such outcomes. With respect to digital inclusion, the most interesting question is who actually benefits from being online. This article answers this question by the results of a representative survey of the Dutch population in 2013. Internet outcomes and benefits are framed in concepts of participation in several domains of society: economic, social, educational, political and institutional. The results show that the same social categories having more access to the Internet also have more outcomes or benefits from Internet use: people with high education and income and young people. Outcomes in fact are the essence or stake of the digital divide. This study shows that some categories of the Dutch population benefit substantially more than others by using the Internet in finding a job, lower prices of products and services, better opportunities of education, a political party to vote for, new friends, a partner in dating and other outcomes.

INTRODUCTION

Among policymakers, there is a strong focus on supporting initiatives that give people the opportunities to live in an information society. These initiatives aim to facilitate online participation among all individuals in all aspects of life. Research in the field of digital inclusion has proliferated rapidly over the last decade, creating a vast body of literature that demonstrates the complexity of the factors at play in individual Internet use. With respect to digital inclusion, the most interesting question is who actually benefits from being online. Unfortunately, theoretical clarity regarding the tangible outcomes of online engagement is scarce, and gauging outcomes is most likely the most complex aspect of analyzing access to the Internet because many outcomes of Internet use do not have clearly reliable and valid measures. Previous research has linked the potential outcomes of Internet use to particular user skills or online activities (e.g., Chen and Wellman, 2005; DiMaggio, Hargittai, Celeste and Shafer, 2004; Hargittai and Hinnant, 2008; Livingstone and Helsper, 2007; Selwyn, 2004). For example, it has been suggested that engaging in capital-enhancing activities is more likely than certain other types of online activities to facilitate opportunities for users (DiMaggio and Hargittai, 2002; Van Dijk, 2005; Hargittai and Hinnant, 2008). However, there is no clear understanding of how differences in skills or use translate into variations in actual outcomes.

In the current study, we focus on the direct implications of Internet use to reveal how ~~the~~ Internet usage immediately affects access to certain opportunities. We depart from studies in which participatory domains of digital exclusion are proposed. After proposing a classification for Internet outcomes, we attempt to answer the basic question 'Who benefits most?' by using a representative sample of the Dutch population. This assessment of outcomes from Internet use reveals that certain individuals and groups benefit more directly than others. Several variables that digital divide research has noted will be discussed.

THEORETICAL BACKGROUND

The digital divide

The so-called digital divide discourse describes inequalities in contemporary society caused by information and communication technology (ICT), and particularly the Internet. The idea underpinning this discourse is that there are benefits associated with ICT-usage and that non-usage has negative consequences. Original conceptualizations of the digital divide were rather superficial, focusing only on the binary of (physical) Internet access/non-access and primarily attributing discrepancies in access to differences in economic, social, and cultural capital; you either had the resources to establish a connection to the Internet or you did not. Internet-connected individuals were on the positive side of this divide and assumed to have access to all of the advantages the Internet had to offer (Van Dijk, 2005). Within this discourse about the digital divide, attention has now shifted to other areas of digital exclusion, including material access, skills, attitudes, and engagement (e.g., Dimaggio et al., 2004; Livingstone and Helsper, 2007; Katz and Rice, 2002; Selwyn, 2006; Van Dijk, 2005; Witte and Mannon, 2010; Zillien and Hargittai, 2009). Research on digital exclusion suggests that variations in these dimensions result in different outcomes from Internet use, thereby affecting the extent to which the Internet enhances one's life. An unequal division of online outcomes is likely to influence social inequality because online behaviors largely mirror offline ones (Witte and Mannon, 2010; Helsper, 2012). Although other media still offer entry points to most information and services, people who go online tend to come in first in the labor market, in political competitions, and in social and cultural affairs.

Outcomes of Internet use

In digital divide research, it is interesting to ask what the outcomes of Internet use are and how people benefit. Several approaches are possible in exploring such outcomes. First, studies in the area of uses and gratifications theory (Katz, Blumler and Gurevitz, 1973) provide several well-established classifications of expected outcomes (i.e., gratifications) of Internet use, which predict individual exposure to the Internet (LaRose and Eastin, 2004). Papacharissi and Rubin (2000) used such an approach to examine the behavioral and attitudinal outcomes of Internet use. Second, prospective gratification measures are also consistent with a social cognitive view of media attendance derived from Bandura's (1986) Social Cognitive Theory (SCT). In SCT, the expected outcomes of a behavior are important determinants of its performance. Third, models of technology acceptance such as the Technology Acceptance Model and the Unified theory of acceptance and use of technology aim to explain user intentions to use ICT and subsequent behaviors associated with the

outcomes of Internet use. Finally, there are studies that focus on even more general outcomes of Internet use, such as well-being or happiness (e.g., Caplan, 2003; Kavetsos and Koutroumpi, 2010).

However, the tangible benefits of Internet use are rarely presented. The implications of Internet use in terms of opportunities—in other words, the direct privileges that Internet use might afford—are studied far less in digital divide research. Most approaches do provide a general idea of how the Internet is used and which general gratifications are obtained. Other approaches use skills or types of Internet engagement as indicators of having benefited from online activity. Studies regarding skills and usage have advanced rapidly and provided useful classifications (e.g., Warschauwer, 2003; Kalmus et al., 2011; Livingstone and Helsper, 2007); however, skills and certain types of usage do not necessarily result in actual beneficial outcomes. Therefore, it is time to move another step forward and focus on making Internet outcomes tangible. In the explorative approach we take here, for example, we make the monetary gratification proposed in uses and gratifications frameworks tangible by focusing on outcomes such as selling products or buying goods. Alternatively, a tangible health gratification (i.e., outcome) of Internet use would be determining the medical condition from which one suffers or finding the best hospital. To measure the possible beneficial outcomes of Internet use, it is necessary to determine the categories in which such benefits can occur. Here, systematic descriptions of inequality can be helpful, as they classify the most valued resources in society.

Classifications of Internet outcomes

Helsper (2012) argues that social and digital exclusion involves similar fields of resources. In this respect, the classifications of economic, social, and cultural capital suggested by Bourdieu (1984) are often used to explain the types of inequalities that are at stake. Helsper's (2012) conceptualization of fields draws on Bourdieu's theorization of traditional inequalities, Sen's (1999) classification of capabilities, and Van Dijk's (2005) conception of resources. Van Dijk (2005) considers the main consequence of the digital divide to be varying levels of participation in several societal fields that all shape the purposes to which the Internet can be put. In each field, possible tangible outcomes as a result of Internet use are proposed.

Economic outcomes

Within the field of economic participation, usually finding a job or income and increasing household budgets by purchasing products and services by a lower price in buying and

higher prices in selling, are the most important achievements. So, this study considers outcomes in terms of labor and commerce on the Internet. Labor-related outcomes of Internet use could include getting a job or earning increased wages because of job performance. For example, a person might get a job because the Internet provides ready access to information about job opportunities (Fountain, 2005; Jansen, Jansen and Spink, 2005). Furthermore, workers who use the Internet may perform better than those who do not (perhaps because they have greater access to information and learning opportunities, use faster and more efficient forms of communication, or have higher job satisfaction). In this way they might obtain more generous performance rewards (DiMaggio and Bonikowski, 2008; Fountain, 2005). Behaviors associated with Internet use are rewarded by the labor market (Freeman, 2002; DiMaggio and Bonikowski, 2008), because workers with less Internet access have suffered from wage inequality in many Western countries, in particular in the U.S. where wage inequality since the late 1970s was partly related by unequal technical skills (Goldin and Katz, 2008).

With respect to commerce, online shopping has recently experienced extraordinary growth in all developed countries as a result of Internet use among both enterprises and individuals (Pérez-Hernández and Sánchez-Mangas, 2011). Related documented outcomes include buying products, obtaining discounts, trading goods for mutual benefit (Bakos, 1998), and enforcing discounts by uniting with others (Bhatnagar and Ghose, 2004). In the domain of tourism, going online to plan and book more affordable holidays is a worldwide trend (Susskind, Bonn, and Dev, 2003).

Social outcomes

Social participation is often defined by the concept of social capital of Bourdieu (1984) and the concept of social community of Putnam (2000). Van Dijk (2005) has linked social participation to the concept of social resources, which primarily means acquiring social connections and obtaining other resources such as material resources. The Internet intensifies interpersonal networks both online and offline (Wellman, 2001). Furthermore, one can increase social participation by facilitating social contact and a sense of community (Katz and Rice, 2002; Quan-Haase, Wellman, Witte and Hampton, 2002). However, these potential outcomes are not uncontroversial; some argue that the Internet enables individualism or simply functions as an additional means of communication (e.g., Slouka, 1995). However, Katz and Rice (2002, p. 326) argue that the Internet goes beyond simply complementing offline interactions to strengthen them as well, noting that the Internet "provides frequent uses for social interaction and extends communication with family and friends." Furthermore, potential social outcomes of Internet use include making and

meeting new friends and finding a partner by participating in online dating (Valkenburg and Peter, 2007).

Political outcomes

The Internet enables several possible benefits in the domain of political participation. This domain contains both institutional politics such as elections and organizing political parties and non-institutional politics such as opinion making and political action without parties. Willis and Tranter (2002) argue that the Internet may alter politics by involving social groups that were not previously engaged in civic participation. However, contrary to popular expectations in the 1990s, research indicates that the Internet is not drawing more people into the political process, as technical opportunities cannot compensate a lack of political motivation by citizens (Brundidge and Rice, 2009; Quan-Haase et al., 2002). However, the Internet does provide politically active individuals with an additional vehicle for expression beyond traditional media, thus potentially conferring even greater power and influence upon these individuals. Furthermore, the Internet makes it easier to join up with a political party or group of people with similar political ideals, which might be significant in a time when people are becoming increasingly skeptical about politics and politicians.

Institutional outcomes

Institutional participation refers to engagement with public information and services. Government and healthcare services fall under the umbrella of institutional participation. Receiving public services can be crucial for sustaining life. Government institutions in high-access countries often assume that the Internet is a generally accessible channel for informing and communicating with citizens (Van Dijk, Pieterson, Van Deursen & Ebbers, 2007). Therefore, the Internet might potentially help people stay abreast of government information. Furthermore, the Internet enables improved contact with the government and using government services of all kinds.

Institutional participation can also be vital in the most literal sense. Healthcare participation is rarely voluntary, as it can be a matter of life and death. Providing health information and services online offers many potential benefits, including facilitating healthier lifestyles, enabling early detection of potential medical problems, allowing for collaborative treatment of illnesses, and providing wider access to treatments (Mittman and Cain, 1999).

Cultural (or educational) outcomes

Cultural participation encompasses knowledge, skills, education, art, entertainment and even social-cultural distinctions that confer social status (Bourdieu, 1984). Internet use can provide cultural benefits on all of those aspects of culture. Since the concept of cultural participation is very wide, this study focuses on the aspect of education because this has a strong relation to the other kinds of Internet outcomes discussed here: economic, social, political and institutional outcomes. The Internet provides access to a wealth of distance learning opportunities at all levels—from primary schools to university training—and for a variety of purposes (i.e., from hobby courses to professional training) (Moore and Kearsley, 2011).

Differences in online outcomes

Digital divide studies focusing on attitudes, skills, access, and digital engagement have defined several variables that can be used to study differences in Internet use; the ones most commonly examined include gender, age, and education (e.g., Bonfadelli, 2002; Dutton, Helsper, and Gerber, 2011; Fox and Madden, 2006; Hargittai and Shafer, 2006; Jackson, Ervin, Gardner et al., 2001; Jones and Fox, 2009; Meraz, 2008; Robinson, DiMaggio, and Hargittai, 2003; Wasserman and Richmond-Abbott, 2005; Zillien and Hargittai, 2009; Van Dijk, 2005). Education and income are often considered a subcategory of socio-economic status. Dimaggio et al. (2004) argued that persons of higher socio-economic status use the Internet more productively and to greater economic gain than their less-privileged but nonetheless connected peers. Other factors that might contribute to building Internet outcomes include employment status and marital status. Disabled, retired, and unemployed people and housewives/husbands are often considered laggards in several aspects of Internet use when compared to their employed counterparts (e.g., Dobransky and Hargittai, 2006; Pautasso, Ferro, and Raguseo, 2011). Furthermore, living with a partner or other people might improve one's chances of experiencing beneficial outcomes from Internet use (e.g. Helsper, 2010), although singles and widow(er)s, for example, might try to get more out of Internet use with respect to social interactions. The final factor considered is residency. Internet patterns mirror aspects of social structures (Graham, 2008; Van Dijk, 2005), and people in rural areas have less access to the Internet and lower levels of access to broadband connections (Hale, et al., 2010).

METHODOLOGY

Sample

We relied on a data set collected in September 2013. PanelClix in the Netherlands performed the sampling and fieldwork. Respondents were recruited from an online panel of 108,000 people which was believed to comprise a largely representative sample of the Dutch population (although migrants were slightly underrepresented). Members of this panel received a small incentive of a few cents for every survey in which they participated. Panel members were invited to participate in the current study via an e-mail explaining the topic of the survey and how much time it would take to complete. In total, 2,600 people were randomly selected with a goal of obtaining a sample of approximately 1,200 individuals. Selection of the respondents accounted for gender, age, and educational level to arrive at a representative sample of the Dutch population.

Several measures were taken to increase the survey response rate. The time needed to answer survey questions was limited to approximately 15 minutes. In addition, the online survey used software that checked for missing responses. Finally, two rounds of survey pretesting were conducted with ten Internet users, and amendments were made at the end of each round based on the feedback provided. The ten respondents in the second round gave no major comments, at which point the survey was deemed ready for posting.

The respondent background variables of gender, age, and education were compared with official census data from the Netherlands. Because amendments were made during data collection to ensure accurate population representation, analyses showed that the gender, age, and formal education of our respondents matched official statistics. As a result, only a very small correction was needed post hoc.

Measures

To measure who benefits most from Internet use, the fields of participation discussed in the theoretical background are used as a starting point. For each outcome domain, we extracted usage items from existing classifications of Internet use. Then, we determined how these items might translate into a corresponding benefit. For example, using the Internet for job hunting could potentially result in the outcome of finding a better job, or online dating might result in finding a potential partner. The following items were extracted from Internet use classifications and match economic commerce outcomes: trading goods (Bakos, 1998), booking holidays (e.g., Lang, 2000; Zillien and Hargittai, 2007), and buying products (e.g., Bhatnagar and Ghose, 2004; Kau, Tang, and Ghose, 2003). Economic labor outcomes might

result from the activities of job searching (e.g., Fountain, 2005) or earning higher wages. Social outcomes might result from meeting people (Parks and Floyd, 1996; Ridings and Wasko, 2010), social interaction (e.g., Quan-Haase et al., 2002), and online dating (e.g., Valkenburg and Peter, 2007). Cultural outcomes might result from searching educational information (e.g., Dutton and Blank, 2011), and political outcomes might stem from participating politically and online voting (e.g., Bakker and De Vreese, 2011; Tolbert and McNeal, 2003). Institutional government outcomes might result from contacting the government (e.g., Sylvester and McGlynn, 2010), and searching medical information might facilitate institutional health outcomes (e.g., Diaz, Griffith, Reinert et al., 2002; Rice, 2006).

Table 1: Internet outcomes

Through the Internet, …	M(SD)
I found an educational course that suits me	0.21(0.41)
I followed a course that I would not have been able to follow offline	0.14(0.35)
I bought a product more cheaply than I could in the local store	0.75(0.43)
I booked a cheaper vacation	0.62(0.49)
I traded goods that I would not have sold otherwise	0.68(0.47)
I have more contact with family and friends	0.67(0.47)
It is easier for friends and family to get ahold of me	0.70(0.46)
I made new friends whom I met later offline	0.34(0.47)
A met a potential partner using online dating	0.13(0.34)
I expressed my political opinion in online discussions	0.13(0.33)
I joined a political association, union or party	0.05(0.23)
I found what political party to vote for	0.30(0.46)
I am better up-to-date with government information	0.63(0.48)
I have better contact with the government	0.33(0.47)
I have discovered that I am entitled to a particular benefit, subsidy or tax advantage	0.30(0.46)
I determined the medical condition from which I was suffering	0.16(0.37)
My life is healthier because of online medical information	0.29(0.46)
I found the best hospital for a condition I suffered from	0.17(0.38)
I found a (better) job	0.18(0.39)
I earn more money	0.14(0.34)

Note that the list of possible benefits derived from these uses is rather broad. Our goal was to include outcomes that are widely acknowledged as products of Internet use for all individuals. Table 1 provides an overview of the outcomes derived from usage classifications that were used for further analyses in the current study. For each determined potential outcome, respondents were asked whether they had ever achieved that particular benefit from using the Internet. We attempted to pose questions regarding benefits in the most valid, straightforward manner possible and used items with a dichotomous response scale (no/yes). These yes- or no-questions ask respondents to report actual behavior (facts of outcomes) and not subjective opinions or attitudes.

To measure *age*, respondents were asked for their year of birth, which was then transformed into a continuous age variable. *Gender* was included as a dichotomous variable. To assess *education*, data regarding degrees earned were collected, which were then used to divide

respondents into three overall groups according to low, medium, and high educational achievement. *Employment status* was coded as dummy variables of the following groups: the employed, the retired, the disabled, househusbands or -wives, the unemployed and students. Income was measured using total family income over the last 12 months, assessed on an 8-point scale ranging from "10,000 Euros" to "80,000 Euros or more." *Marital status* was coded as dummy variables of the following categories: single, married, living together, divorced, and widow(er). Finally, *place of residence* was included as a dichotomous variable (urban and rural).

Data analyses

To examine the structure of the outcome items, responses to all items were subjected to factor analysis. Principal axis factoring (PAF) with varimax rotation was used to determine the factor structure of the 20 items used to assess the Internet outcomes. Costello and Osborne (2005) suggest the use of the PAF method if the assumption of multivariate normality is violated. Here, the multivariate normality assumption will not be met because the scales of the Internet outcomes are composed of binary items that can take only one of two values. Given this fact, the use of PAF is more appropriate than other factor analytic approaches. An eight-factor structure fitted the results best. A Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) of .82 was obtained, which exceeds the target of 0.7 suggested by Pett, Lackey, and Sullivan (2003). This result indicates that factor analysis was an appropriate strategy for analyzing this study's data. Bartlett's Test of Sphericity was also statistically significant, $\chi^2=3516.60$, $p<0.001$. Tabachcick and Fidell (2001) suggest .32 as a good rule of thumb for the minimum loading of an item. The findings indicate that an eight-factor solution was considered appropriate for the sample used in this study. In total, 17 items with minimum factor loadings higher than .32 (all exceeded .40) were selected for measuring Internet outcomes. The factor loading values and the loading of the individual items are displayed in Table 2. The eight factors extracted from the item analysis accounted for 70.0% of the variance.

Table 2: Subscale loadings of Internet outcomes

Subscale	Factors							
Through the Internet, ...	1	2	3	4	5	6	7	8
I found an educational course that suits me	.73							
I followed a course that I would not have been able to follow offline	.67							
I bought a product more cheaply than I could in the local store		.67						
I booked a cheaper vacation		.48						
I traded goods that I would not have sold otherwise		.40						
I have more contact with family and friends			.60					
It is easier for friends and family to get ahold of me			.50					
I made new friends whom I met later offline			.45					
I expressed my political opinion in online discussions				.59				
I joined a political association, union or party				.53				
I am better up-to-date with government information					.60			
I have better contact with the government					.54			
I determined the medical condition from which I was suffering						.56		
My life is healthier because of online medical information						.52		
I found a (better) job							.58	
I earn more money							.42	
I met a potential partner using online dating								.68

Factor 1, which represents educational outcomes, accounts for 23.56% of the variance. Factor 2, which represents economic commerce outcomes, accounts for 10.29%, and Factor 3, which represents social outcomes, accounts for 7.33%. Factor 4 represents political outcomes and accounts for 6.47%, whereas factor 5, which represents institutional government outcomes, accounts for 5.99%. Factor 6 represents institutional health outcomes and accounts for 5.23%. Factor 7 represents economic labor outcomes and accounts for 5.20%, while factor 8 represents dating outcomes and accounts for 4.89%. The Cronbach's alpha coefficient obtained for the items overall was high (α=.80).

For each factor, we created a summative scale from the underlying dichotomous items. This summative scale was then transposed to a dichotomous scale (i.e., if one of the questions for each factor was answered with "Yes," the factor value was 1. If all of the questions were answered with "No," the factor value was 0). Logistic regression analyses were performed for the newly created dichotomous scales to determine the nature of the relationship between people's background characteristics and the Internet outcomes. The regression models included the independent variables of gender, age, education, employment status, income, household composition, and residency.

Finally, to determine who benefits most overall, we conducted a linear regression analysis with a dependent variable created from summing all 17 individual outcomes (M=6.1,

SD=3.4, range 0-17). This newly created summed variable was log-transformed to correct for skewness.

RESULTS

Respondents

A total of 1,159 responses were received (22%), of which 10 were rejected for being incomplete. Thus, a total of 1,149 responses were used for data analysis. Table 3 summarizes the demographic profile of the respondents. The mean age of the respondents was 48.2 years (SD=17.4), with respondent age ranging from 16 to 87. Almost all respondents had been born in the Netherlands (95%).

Table 3: Demographic profile

		N	%
Gender			
	Male	579	50
	Female	570	50
Age			
	16-35	288	25
	36-45	213	19
	46-55	205	18
	56-65	226	20
	66+		
Education			
	Low	354	31
	Medium	513	45
	High	282	25
Income			
	Below modal	249	22
	Modal	377	33
	Above modal	234	20
Social Status			
	Single	260	23
	Married	557	49
	Living together	193	17
	Divorced	94	8
	Widow	45	4
Employment			
	Employed	552	48
	Unemployed	75	7
	Disabled	85	7
	Retired	253	22
	Househusband/wife	90	8
	Student	94	8
Residence			
	Rural	501	44
	Urban	648	56

Internet outcomes

To determine who benefits most from Internet use, we investigated the relationship between the eight outcome clusters and the independent variables (cf. Table 4).

Economic outcomes

Individuals with medium and high levels of education are more likely to experience economic outcomes related to commerce than less educated individuals. Furthermore, people with an average income are more likely to benefit from Internet use than those earning a below average income. Students are more likely to achieve commerce-related outcomes than employed people, and people living together in one household are more likely than singles to benefit in this respect. Economic outcomes related to labor (i.e., income and job) are most likely to be achieved among the youngest group (i.e., those between the ages of 16 and 35). Additionally, unemployed people are more likely to benefit from Internet use than employed people. Disabled persons and househusbands/wives are less likely than employed individuals to reap these benefits.

Table 4: Logistic regression analyses for Internet outcome clusters

Explanatory variables	Economic Commerce	Economic Labor	Social Friends	Social Dating	Political	Institutional Government	Institutional Health	Educational
	Odds-ratio	Odds-ratio	Odds-ratio	Odds-ratio	Odds-ratio	Odds-ratio	Odds-ratio	Odds-ratio
Constant	1.72	0.724	3.58**	0.58**	0.32*	0.54	0.28***	0.36*
Gender								
Female	1.28	1.07	1.02	0.49**	0.65*	0.87	1.15	1.02
Age (ref. 16-35)								
36-45	1.99	0.57*	1.15	1.20	0.80	1.65*	0.77	0.50**
46-55	1.66	0.26***	1.07	0.45*	0.43**	1.74*	0.89	0.86
56-65	1.03	0.10***	0.81	0.50	0.28**	1.71*	0.59*	0.44**
66+	0.59	0.09***	1.06	0.11	0.93	1.37	0.58	0.44
Educational level (ref. low)								
Medium	1.74*	1.05	0.98	1.49	1.11	1.66**	1.71**	1.21
High	3.02**	1.41	1.12	1.64	1.04	2.91***	1.30	2.58***
Income (ref. below average)								
Average	2.31**	1.11	1.36	1.75	1.17	1.51*	1.67**	1.35
Above average	1.85	1.35	1.02	1.26	1.60	2.37***	1.46	1.63*
Social status (ref. single)								
Married	1.54	0.98	0.98	0.27***	1.24	1.00	0.81	0.60*
Living together	2.78*	0.93	2.11*	0.82	1.44	1.49	1.17	1.16
Divorced	2.08	1.30	2.93**	2.82**	1.64	1.97*	1.25	1.02
Widow(er)	0.83	1.53	0.85	4.07**	1.61	0.79	0.49	0.61
Labor position (ref. employed)								
Unemployed	2.35	1.82*	1.57	1.41	1.11	3.63***	2.80***	1.57
Disabled	0.57	0.32**	0.85	0.61	0.99	0.86	1.73*	0.51*
Retired	0.84	0.40	1.20	1.00	0.78	1.45	1.43	0.59
Househusband/wife	0.67	0.22**	1.14	1.50	1.05	0.72	1.62	0.40
Student	3.39*	0.91	1.00	0.66	1.68	1.54	1.79*	1.07
Region (ref. rural)								
Urban	1.00	1.18	0.99	0.73	0.82	1.33*	0.91	0.92
Nagelkerke R²	.16	.29	.08	.22	.07	.15	.07	.18
Chi-square	82.65***	233.76***	52.97***	108.48***	43.30	120.36	58.69	136.22***

*significant at the 5% level, **significant at the 1% level, ***significant at the 0.1% level

Social outcomes

People living with others and divorced individuals are more likely than singles to experience the social outcomes of Internet use. Outcomes related to dating are more likely among men than women and less likely among people between the ages of 46 and 55, as compared to those between the ages of 16 and 35. Unsurprisingly, , married people are less likely than singles to benefit from online dating, while divorced and widow(er)s are much more likely.

Political outcomes

Online, men are more likely than women to gain political outcomes. These outcomes are less likely among people between the ages of 46 and 55 and 50 and 64, as compared to people between the ages of 16 and 35.

Institutional outcomes

Institutional outcomes related to the public services of the government (excluding health-related ones) are more likely among people between the ages of 36 and 45, 46 and 55, and 55 and 65, as compared to people between the ages of 16 and 35. Individuals with a medium or high level of education are more likely than their less educated counterparts to use the Internet to obtain government outcomes such as staying up-to-date with public information and maintaining better contact with the government. Furthermore, people with an average or above average income are more likely to benefit politically. Divorced people seem to achieve more political outcomes than singles. Furthermore, it seems that unemployed people benefit more than employed people. Finally, individuals from urban areas benefit more than people living in rural areas.

With respect to healthcare-related institutional outcomes, people between the ages of 56 and 65 benefit less than people between the ages of 16 to 35. People with a medium level of education benefit more than people with a lower level of education, and people with an average income benefit more than those earning a below average income. Students and unemployed people benefit more than employed people from health outcomes.

Educational outcomes

In terms of educational outcomes, individuals between the ages between 36 and 45 and between 56 and 65 are less likely to benefit than people between the ages of 16 and 35. Furthermore, individuals with a higher level of education and those with above average

incomes benefit more. Married people benefit less than singles, and disabled persons benefit less than employed people.

Total number of outcomes

To determine who benefits most overall, we conducted a linear regression analyses for the sum of the 17 individual outcomes. Table 4 reveals that, with age, the number of benefits decrease, while education contributes positively. People with an average or above average income gain more from Internet use than individuals earning a below average income. Furthermore, when compared to singles, divorced individuals gain more. Finally, unemployed people benefit more than employed people.

Table 5: Linear regression analyses for total number of Internet outcomes

Explanatory variables	B
Gender	
Female	.02
Age (ref. 16-35)	
36-45	-.06
46-55	-.15***
56-65	-.20***
66+	-.21***
Educational level (ref. low)	
Medium	.06*
High	.12***
Income (ref. below average)	
Average	.16***
Above average	.17***
Social status (ref. single)	
Married	.01
Living together	.04
Divorced	.12**
Widow	-.02
Labor position (ref. employed)	
Unemployed	.12***
Disabled	-.03
Retired	-.01
Househusband/wife	-.07
Student	.03
Region (ref.rural)	
Urban	.03
Adj.R²	.14

*significant at the 5% level, **significant at the 1% level, ***significant at the 0.1% level

DISCUSSION

Main findings

Over the last decade, research regarding the digital divide has transformed from considering differences in Internet access to exploring variations in attitude, skills, and engagement. The basis of this exploration is the idea that some people benefit more from the Internet than others. Although this research provides strong indicators of who actually gains from Internet use, actual tangible outcomes are rarely measured directly. The current study explored outcomes from Internet use in the Netherlands, a country with very high household Internet penetration (97% in 2013) and a high level of educational attainment by citizens. Our analysis of the data from a representative population survey suggests that the Internet contributes to the lives of many Dutch individuals in the economic, social, political, cultural, and institutional spheres. The most common economic outcomes achieved are related to commerce, such as gaining price advantages. The primary social gains facilitated by Internet use include increased contact with family and friends and the creation of new friendships online that continue offline. Furthermore, the Internet facilitates institutional engagement by providing access to up-to-date public information. Most striking, perhaps, is the fact that over a quarter of the respondents claim to live healthier lives due to information available online. It is unlikely that any other media could claim to have had a comparable perceived impact.

The main goal of this study was to investigate who actually benefits most from Internet use. The results suggest that most of the digital divide indicators examined contribute to several of the Internet outcomes investigated. We observed differences in economic outcomes related to commerce and labor, social outcomes related to friends/family and dating, cultural outcomes related to education, institutional outcomes related to the government and health, and political outcomes. When comparing outcomes by gender, the only difference that emerged concerned political outcomes. It is a common and consistent finding in political science research that in most countries women exhibit lower levels of political knowledge than men (Dolan, 2011). This difference in interest may influence the political outcomes of online engagement. Overall, the results from this study suggest that, at least in the Netherlands, gender differences in beneficial Internet use are largely absent.

When comparing different age categories, it seems that commercial and social outcomes related to friends and family are gained equally. Both outcomes result from usage activities that gained a lot of popularity among people of all ages. With respect to online commerce, findings in prior studies regarding age have been inconsistent; some research showed that

older individuals are more likely to buy online, while other research found that younger consumers more likely than older consumers to shop online (Cowart and Goldsmith, 2007). The fact that no age differences appeared for outcomes related to friends and family can be approved, as it might suggest that seniors increasingly use the Internet to achieve more contact with friends and family, which might counter loneliness. In the political domain, middle-aged people seem to benefit more than the youngest and oldest groups. It is often suggested that people well into their 40s are more politically engaged (e.g. Putnam, 2000; Rosenstone and Hansen, 2003). Perhaps younger people have not yet developed firmly ingrained political habits and are therefore much more open to being influenced by new political experiences online (Quintelier and Vissers, 2008). It is very notable that young and middle-aged people seem to benefit more from the Internet in the area of healthcare, which is a domain in which people over 56 have relatively high needs. Overall, it seems that age has a negative influence on Internet outcomes, suggesting that the young gain more from Internet use than the elderly.

Highly educated individuals benefit more from the Internet than those with less education, especially in the domains of economic commerce, institutional government and education. Similar results can be observed when investigating differences in income. Although more and more people seem to profit from Internet use, the Internet remains more beneficial for those with higher social status for several important domains. When information and services are offered online (or replaced by online counterparts), the number of potential outcomes the Internet has to offer increases. If individuals with higher social status are taking greater advantage of these online benefits than their lower status counterparts, existing offline inequalities could potentially enlarge, as Internet use and the outcome domains investigated here could potentially reinforce each other. By using Bourdieu's classifications of capital, Van Dijk (2005) stressed that economic capital is required to support Internet use (e.g., Internet provider subscriptions), social capital is needed to learn to connect to and use the Internet, and cultural capital is needed to cope with the diversity of available content. Conversely, the Internet can affect an individual's access to these types of capital; for example, it enables users to obtain economic capital by facilitating access to profitable resources, social capital by extending physical networks to virtual ones, and educational capital by enabling learning experiences. As previous investigations of access, skills, attitudes, and Internet activities emphasize, overcoming digital divides is a complex challenge. The current study's results concerning employment and marital status, both of which affect specific outcome domains, highlight this complexity. Divorced people seem to gain from social outcomes related to friends and family and dating. Notably, widow(er)s benefit socially by finding potential new partners through Internet use. In contrast to previous research, this study's results indicate that unemployed people gain more benefits

from Internet use than employed people. Unemployed individuals are often considered to have a low socio-economic status. However, they at least have one resource at their disposal: time to spend for using the Internet. Luckily, the Internet offers many possible outcomes for them.

Study limitations and future research

Because this study should be considered exploratory in the sense that investigations of tangible outcomes within digital divide research are relatively scarce, and there is no theory that exactly provides operational definitions for the fields investigated, we attempted to create a new instrument using several outcomes that could result from different forms of Internet use. Although a factor structure emerged, the outcome domains are represented by only two or, in some cases, three items. However, the idea and results seem promising, and we encourage others to build upon these results so stronger classifications of Internet outcomes will emerge. The notion of digital exclusion has become important in communications research, and this study suggests that the Internet has an impact in economic, social, political, cultural, and institutional domains.

Although we took a first step towards achieving improved understanding of how Internet use facilitates certain outcomes, this study offers only a preliminary exploration of beneficial Internet use. In all fields discussed, numerous tangible outcomes can be suggested. We have focused on outcomes that are often cited as advantages of Internet use or that are implicitly part of Internet use classifications. For future investigations, a more valid and reliable nested item structure is needed to cover digital participation in each domain more fully. However, one should ensure that these items do not use subjective opinions or attitudes. Measures of outcomes from digital engagement are still in their infancy, and the items proposed in this study might serve as a starting point for future research.

It also remains unclear how the online outcomes measured relate to their offline counterparts. We do not yet know whether people who fail to benefit online succeed offline. Although the items used in this study provide some indications, future research should attempt to compare instances of online and offline exclusion to provide a more nuanced understanding of how exactly people benefit from being online.

CONCLUSION

The Internet contributes to the lives of many Dutch individuals in the economic, social, political, cultural, and institutional spheres. The most common economic outcomes achieved are related to commerce, such as gaining price advantages. The primary social gains facilitated by Internet use include increased contact with family and friends and the creation of new friendships online that continue offline. Furthermore, the Internet facilitates institutional engagement by providing access to up-to-date public information. Over a quarter of the respondents claim to live healthier lives due to information available online. When answering who benefits most from being online, we observed differences in economic outcomes related to commerce and labor, social outcomes related to friends/family and dating, cultural outcomes related to education, institutional outcomes related to the government and health, and political outcomes. Differences over gender, age, education, income, social status, labor position and region all contributed in their own way to achieving benefits in the domains studied. Similarities between participation in the offline and online world are often a topic of debate in discussions about social inequality. In these discussions, the Internet is increasinbgkly considered an active reproducer and potential accelerator of social inequality (Witte and Mannon, 2010).

REFERENCES

Bakker TP and De Vreese CH (2011) Good news for the future? Young people, Internet use, and political participation. *Communication Research* 38(4): 451-70.

Bakos C (1998) The emerging role of electronic marketplaces on the Internet. C*ommunications of the ACM* 41(8): 35-42.

Bandura A (1986) *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bhatnagar A and Ghose S (2004) Segmenting consumers based on the benefits and risks of Internet shopping. *Journal of Business Research* 57(12): 1352-60.

Bonfadelli H (2002) The Internet and knowledge gaps: a theoretical and empirical investigation. *European Journal of Communication* 17(1): 65-84.

Bourdieu P (1984) *Distinction: a social critique of the judgment of taste*. London: Routledge.

Brundidge JS and Rice RE (2008) Political Engagement Online: Do the Information Rich Get Richer and the Like-Minded More Similar?, In A Chadwick and PN Howard (eds) *The Handbook of Internet Politics* London: Routledge, pp. 144-56.

Caplan SE (2003) Preference for Online Social Interaction A Theory of Problematic Internet Use and Psychosocial Well-Being. *Communication Research* 30(6): 625-48.

Chen W and Wellman B (2005) Minding the gaps: the digital divide and social inequality. In: M Romero and E Margolis (eds) *Blackwell Companion to Social Inequalities*. Oxford: Blackwell, pp. 523-45.

Costello AB and Osborne J (2005) Best practices in exploratory factor analysis: four recommendations for getting most from your analysis. Practical *Assessment Research & Evaluation* 10(7): 1-9.

Cowart KO and Goldsmith RE (2007) The influence of consumer decision-making styles on online apparel consumption by college students. *International Journal of Consumer Studies* 31(6): 639-47.

Diaz JA, Griffith RA, Ng JJ, Reinert SE, Friedmann PD and Moulton A.W. (2002) Patients' Use of the Internet for Medical Information. *Journal of General Internal Medicine* 17(3): 180-185.

DiMaggio P and Bonibowski B (2008) Make money surfing the web? The impact of internet use on the earnings of U.S. Workers. *American Sociological Review* 73(2): 227-50.

DiMaggio P and Hargittai E (2001) From the 'Digital Divide' to 'Digital Inequality': studying Internet use as penetration increases. Working Paper Series 15. Princeton, NJ: Princeton University Center for Arts and Cultural Policy Studies.

DiMaggio P, Hargittai E, Celeste C and Shafer S (2004) From Unequal Access to Differentiated Use: A Literature Review and Agenda for Research on Digital Inequality. In Neckerman K (ed.) *Social Inequality*. New York: Russell Sage Foundation, pp. 355-400.

Dobransky K and Hargittai E (2006) The disability divide in Internet access and use. *Information, Communication & Society* 9(3): 313-34.

Dolan K (2011) Do women and men know different things? Measuring gender differences in political knowledge. *Journal of Politics* 73(1): 97-107.

Dutton WH and Blank G (2011) Next generation users: The internet in Britain.

Dutton WH, Helsper E and Gerber M (2011) *The Internet in Britain in 2011*. Oxford: Oxford Internet Institute.

Fountain C (2005). Finding a Job in the Internet Age. *Social Forces* 83(3): 1235-62.

Fox S and Madden M (2006) *Generations online (Demographic Report)*. Washington, DC: Pew Internet and American Life Project.

Freeman R (2002) The labour market in the new information economy. *Oxford Review of Economic Policy* 18(3): 288-305.

Goldin C and Katz LF (2008) *The race between education and technology*. Cambridge, MA: The Belknap Press of Harvard University.

Graham R (2008) The stylisation of Internet life? Predictors of Internet leisure patterns using digital inequality and status group perspectives. *Sociological Research Online* 13(5): 5.

Hale TM, Cotton SR, Drentea P and Goldner M. (2010) Rural-urban differences in general and health-related Internet usage. *American Behavioral Scientist* 53(9): 1304-25.

Hargittai E and Hinnant A (2008) Digital Inequality: Differences in Young Adults' Use of the Internet. *Communication Research* 35(5): 602-21.

Hargittai E and Shafer S (2006) Differences in actual and perceived online skills: the role of gender. *Social Science Quarterly* 87(2): 432-48.

Helsper EJ (2012) A corresponding fields model for the links between social and digital exclusion. *Communication Theory* 22(4): 403-26.

Helsper EJ (2010) Gendered Internet use across generations and life stages. *Communication Research* 37(3): 352-74.

Jackson LA, Ervin KS, Gardner KS et al. (2001) Gender and the Internet: women communicating and men searching. *Sex Roles* 44(5/6): 363-80.

Jansen B, Jansen K and Spink A (2005) Using the web to look for work – implications for online job seeking and recruiting. *Internet Research* 15(1): 49-66.

Jones S and Fox S (2009) *Generations online in 2009*. Washington, DC: Pew Internet and American Life Project.

Kalmus V, Realo A and Siibak A (2011) Motives for Internet use and their relationships with personality traits and socio-demographic factors. *Trames* 15*(65/60)*: 385-403.

Katz E, Blumler JG and Gurevitch M (1973) Uses and gratifications research. *Public Opinion Quarterly* 37(4): 509-23.

Katz JE and Rice R (2002) *Social Consequences of Internet Use: Access, Involvement, and Interaction*. Cambridge, MA: MIT Press.

Kau AK, Tang YE and Ghose S (2003) Typology of online shoppers. *Journal of Consumer Marketing* 20(2): 139-56.

Kavetsos G and Koutroumpis P (2010) Technological Affluence and Subjective Well-Being. Available at: http://ssrn.com/abstract=1552404

Lang TC (2000) The effect of the Internet on travel consumer purchasing behaviour and implications for travel agencies. *Journal of Vacation Marketing* 6(4): 368-85.

LaRose R and Eastin MS (2004) A social cognitive theory of Internet uses and gratifications: Toward a new model of media attendance. *Journal of Broadcasting & Electronic Media* 48(3): 358-77.

Livingstone S and Helsper E (2007) Gradations in digital inclusion: Children, young people and the digital divide. *New Media and Society* 9(4): 671-696.

Meraz S (2008) Women and technology: How socialization created a gender gap. In PM Pointdexter, S Meraz and A Schmitz (eds) *Women, men and news: Divided and disconnected in the news media landscape.* New York: Routledge, pp. 99-116.

Mittman R and Cain M (1999) *The future of the Internet in health care: A five-year forecast.* Oakland, CA: California HealthCare Foundation.

Moore MG and Kearsley G (2011) Distance education: A systems view of online learning. Cengage Learning.

Papacharissi Z and Rubin AM (2000) Predictors of Internet use. *Journal of Broadcasting & Electronic Media* 44(2): 175-196.

Parks MR and Floyd K (1996) Making Friends in Cyberspace. *Journal of Computer-Mediated Communication* 1(4): 0.

Pautasso E, Ferro E and Raguseo E (2011) Understanding eInclusion gaps across European regions: A benchmarking analysis. In Information Society 2011, International Conference (pp. 279-286). IEEE.

Pérez-Hernández J and Sánchez-Mangas R (2011) To have or not to have Internet at home: implications for online shopping. *Information Economics and Policy* 23(3): 213-226.

Pett MA, Lackey NR and Sullivan JJ (2003) Making sense of factor analysis: The use of factor analysis for instrument development in health care research. Thousand Oaks: Sage.

Putnam RD (2000) *Bowling alone: The collapse and revival of American democracy.* New York: Simon & Schuster.

Quan-Haase A, Wellman B, Witte J and Hampton K (2002). Capitalizing on the Internet: social contact, civic engagement and sense of community. In B Wellman and C Haythornthwaite (eds) *The Internet in everyday life.* Oxford: Blackwell, pp. 291-324.

Quintelier E and Vissers S (2008) The Effect of Internet Use on Political Participation: An Analysis of Survey Results for 16-Year-Olds in Belgium. *Social Science Computer Review* 26(4)*:* 411-27.

Rice RE (2006) Influences, usage, and outcomes of Internet health information searching: multivariate results from the Pew surveys. *International Journal of Medical Informatics* 75(1): 8-28.

Ridings C and Wasko MM (2010) Online discussion group sustainability: Investigating the interplay between structural dynamics and social dynamics over time. *Journal of the Association for Information Systems* 11(2): Article 1.

Robinson J, DiMaggio P and Hargittai E (2003) Social survey perspectives on the digital divide. *IT & Society* 1(5): 1-22.

Rosenstone SJ and Hansen JM (2003). *Mobilization, participation, and democracy in America.* New York: Longman.

Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New Media & Society* 6(3): 341-62.

Selwyn N (2006) Digital division or digital decision? A study of non-users and low-users of computers. *Poetics* 34(4-5): 273-92.

Sen AK (1985) *Commodities and Capabilities.* Oxford: Oxford University Press.

Slouka M (1995) *War of the worlds: Cyberspace and the high-tech assault on reality*. New York: Basic Books.

Susskind AM, Bonn MA and Dev C (2003) To look or book: An examination of consumers' apprehensiveness toward internet use. *Journal of Travel Research* 41(3): 256-264.

Sylvester DE and McGlynn AJ (2010) The digital divide, political participation, and place. *Social Science Computer Review* 28(1): 64-74.

Tabachcick BG and Fidell LS (2001) Using multivariate statistics. Boston: Allyn and Bacon.

Tolbert CJ and McNeal RS (2003) Unraveling the effects of the Internet on political participation? *Political Research Quarterly* 56(2): 175-85.

Valkenburg PM and Peter J (2007) Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology* 43(2): 267-277.

Van Dijk J (2005) *The deepening divide. Inequality in the information society*. London: Sage.

Van Dijk J, Pieterson W, Van Deursen A and Ebbers W (2007) eServices for Citizens: The Dutch usage case. *Lecture Notes in Computer Science 4656*: 155-166.

Wasserman IM and Richmond-Abbott M (2005) Gender and the Internet: Causes of variation in access, level, and scope of use. *Social Science Quarterly* 86(1): 252-270.

Warschauer M (2003) *Technology and Social Inclusion: Rethinking the Digital Divide*. Cambridge, MA: The MIT Press.

Wellman B (2001) Physical place and cyberspace: The rise of personalized networks. *International Urban and Regional Research* 25(2): 227-52.

Willis S and Tranter B (2006) Beyond the digital divide. Internet diffusion and inequality in Australia. *Journal of Sociology* 42(1): 43-59.

Witte JC and Mannon SE (2010) *The Internet and social inequalities*. New York: Routledge.

Zillien, N. and Hargittai, E. (2009) Digital Distinction: Status-Specific Types of Internet Usage. *Social Science Quarterly* 90(2): 274-91.

Electronic Working Papers

Media@LSE Electronic Working Papers will:

- Present high quality research and writing (including research in-progress) to a wide audience of academics, policy-makers and commercial/media organisations.
- Set the agenda in the broad field of media and communication studies.
- Stimulate and inform debate and policy. All papers will be published electronically as PDF files, subject to review and approval by the Editors and will be given an ISSN.

An advantage of the series is a quick turnaround between submission and publication. Authors retain copyright, and publication here does not preclude the subsequent development of the paper for publication elsewhere.

The Editor of the series is Bart Cammaerts. The Deputy Editors are Nick Anstead and Ruth Garland. The editorial board is made up of other LSE academics and friends of Media@LSE with a wide range of interests in information and communication technologies, the media and communications from a variety of disciplinary perspectives (including economics, geography, law, politics, sociology, politics and information systems, cultural, gender and development studies).

Notes for contributors:

Contributors are encouraged to submit papers that address the social, political, economic and cultural context of the media and communication, including their forms, institutions, audiences and experiences, and their global, national, regional and local development. Papers addressing any of the themes mentioned below are welcome, but other themes related to media and communication are also acceptable:

- Communication and Difference
- Globalisation and Comparative Studies
- Innovation, Governance and Policy
- Democracy, Politics and Journalism Ethics
- Mediation and Resistance
- Media and Identity
- Media and New Media Literacies
- The Cultural Economy

Contributions are welcomed from academics and PhD students. In the Michaelmas Term each year we will invited selected Master's students from the preceding year to submit their dissertations which will be hosted in a separate part of this site as 'dissertations' rather than as Working Papers. Contributors should bear in mind when they are preparing their paper that it will be read online.

Papers should conform to the following format:

- 6,000-10,000 words (excluding bibliography, including footnotes)
- 150-200 word abstract
- Headings and sub-headings are encouraged
- The Harvard system of referencing should be used
- Papers should be prepared as a Word file
- Graphs, pictures and tables should be included as appropriate in the same file as the paper
- The paper should be sent by email to Bart Cammaerts (b.cammaerts@lse.ac.uk), the editor of the Media@LSE Electronic Working Paper-Series