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Benefits and Harms from Internet Use

A Differentiated Analysis of Great Britain

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Abstract: Recent studies have enhanced our understanding of digital divides by investigating outcomes of Internet use. We extend this research to analyse positive and negative outcomes of Internet use in the United Kingdom. We apply structural equation modelling to data from a large Internet survey to compare the social structuration of Internet benefits with harms. We find that highly educated users benefit most from using the web. Elderly individuals benefit more than younger ones. Next to demographic characteristics, technology attitudes are the strongest predictors of online benefits. The harms from using the Internet are structured differently, with educated users and those with high levels of privacy concerns being most susceptible to harm. This runs counter to intuitions based on prior digital divide research, where those at the margins should be most at risk. While previous research on digital inequality has only looked at benefits, the inclusion of harms draws a more differentiated picture.

Keywords: internet outcomes; digital divide; internet benefits; online risks; digital inequality

Benefits and Harms from Internet Use: A Differentiated Analysis of Great Britain

Discussions of how people use the Internet have often been dominated by optimism. Optimistic observers hoped that ready access to information would contribute to a more informed, enlightened public (Bimber, 2001; Boulianne, 2009). Online media also facilitate public self-expression (Ellison et al., 2007; Kane et al., 2013). Social media, in particular, make it easy for lay users to publish diverse content – be it texts, pictures, videos or audio – to a (potentially) very large audience (Blank and Reisdorf, 2012; Correa, 2010; Hargittai & Walejko, 2008; Lutz et al., 2014). Based on personal profiles, users can quickly connect to like-minded citizens and become members of lively communities of interest (Gil de Zúñiga et al., 2010; Woodly, 2007; Zhang et al., 2009). In short, online media facilitate participation in a variety of civic domains and provide countless benefits.

However, not all users benefit equally from new media. Demographic characteristics differentiate web use, online skills, and online participation (Hargittai, 2002, 2010; Hargittai and Hinnant, 2008; Van Deursen and Van Dijk, 2010; Van Dijk, 2005; Zillien and Hargittai, 2009). Researchers use the concept of a digital divide and are increasingly extending it from access to uses, to participatory uses. Despite many studies of the digital divide, the social structuration of Internet outcomes has been scarcely investigated. Only recently, a few investigations have tackled the question “who benefits from using the Internet” (Helsper et al., 2015; Van Deursen and Helsper, 2015; Van Ingen and Matzat, 2015). These studies found that demographics not only influence Internet uses but also outcomes from online practices. Privileged users manage to use the Internet more productively and take more advantage – be it economic, social or health-related – from its use than less privileged users (Bonfadelli, 2002; Zillien and Hargittai, 2009).

At the same time, the social structuration of these advantages differs according to the social field in question. In a large survey study in the Netherlands, Van Deursen and Helsper

(2015) find significant social structuration of Internet benefits in terms of age and SES. In particular, younger and high SES users profit more from using the Internet than older and low SES users. However, this does not apply to social benefits from using the Internet. Except for benefits in the political domain (where males are advantaged), there are no significant gender effects. These results are promising but more research is needed to investigate the outcomes from Internet use. In particular, previous digital inequality research has neglected the harms from using the Internet. The latter has been studied more in research on adolescents and cyber-risks (Livingstone & Helsper, 2010). Harms can be defined in several ways, and we return to this question in the discussion. For this paper we define harm as online harm; actual damages that people suffer as a result of their Internet use.

The benefits from using online services and their social structuration need to be contrasted with the harms to reach a holistic understanding of digital outcomes. The current study therefore provides a theory-driven analysis of a rich dataset from the United Kingdom in terms of Internet benefits and harms. This extends existing research by giving a more nuanced picture of the outcomes of Internet use than previous work. We base our analysis on structural equation modelling of benefits and harms from Internet use, applying uses and gratifications theory as an inspiration but going beyond it. Our overarching research question is: *How are the benefits and harms from using the Internet structured by demographic as well as cognitive factors?*

Literature Review

Uses and Gratifications

Our investigation into benefits and harms draws on uses and gratifications theory (U&G). Similarly to social cognitive theory (Bandura, 1986), U&G considers expected

outcomes or gratifications sought as explanations for behaviour. It also includes gratifications obtained in the case of continuous media use (Quan-Haase and Young, 2010). Therefore, U&G is an obvious choice as a theoretical lens through which to study the benefits of using the Internet.

U&G focuses on why people use particular media by examining the satisfaction of needs through different forms of media use; more specifically, it directs attention to

> "(1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media or other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) need gratifications and (7) other consequences, perhaps mostly unintended ones" (Blumler and Katz, 1974: 20).

U&G theory has five basic assumptions (Ancu and Cozma, 2009; Blumler and Katz, 1974; Lundy et al., 2008; Rubin, 2009; Ruggiero, 2000). First, the audience is active, not passive—communication behaviour, including media selection and use is purposive, motivated and goal-oriented. Second, individuals select and use media to fulfil a collection of needs, wants and interests which may be biological, psychological or social, or a combination. Third, people are self-aware, know their needs and can articulate reasons and gratifications for using certain media. Fourth, individual predispositions as well as environmental, psychological and social factors shape media selection and expectations. Finally, different media and other sources, such as interpersonal interaction, compete for attention, selection and use to gratify one's needs and wants.

In the last decade scholars have agreed that the diversity of choices and the interactive nature of the Internet make it a particularly fertile research site to employ the U&G perspective (December, 1996; LaRose and Eastin, 2004; Morris anc Ogan, 1996; Ruggiero, 2000). Compared to other media the Internet offers a wider range of uses. Moreover, the Internet allows for very different uses of the same online venue. For example, one person may use an online news site primarily to read the latest news, while another posts comments, debates with

other readers, while a third redistributes news via links in messages and emails. Each of these different uses may lead to different gratifications or benefits (we use these terms as synonyms) and may potentially expose users to different harms. Users actively choose which online media to use and how to use them. Other media, especially traditional mass media, like television and newspapers, do not facilitate as wide a range of uses. For these reasons, the U&G paradigm is especially suitable for conceptualizing research on benefits and harms of online media.

Numerous studies have explored Internet use from the perspective of U&G. Building on early studies which showed that media may help people find a sense of personal identity, gather information, assist social interaction or gratify a desire for entertainment (Lacey, 2002; Papacharissi and Rubin, 2000), several Internet-specific benefits have been discovered. Stafford et al. (2004) suggested that besides process (concerning the actual use, e.g. browsing) and content (concerning the messages, e.g. information and entertainment) gratifications, the Internet is used also for social gratifications, specifically interpersonal communication and social networking.

Thus, U&G theory and research leads to the general hypothesis that people with distinct demographic, psychological and social characteristics will use the Internet in disparate ways to gratify different needs and desires. Even though the Internet offers the same affordances to all users, users make the choice of what they do on the Internet and how they interact. Thus, we examine benefits and harms through the lens of U&G paradigm.

Despite the usefulness of the U&G approach, it has been criticized for neglecting social structures and over-emphasizing individual choice (for a summary of criticisms and shortcomings, see Ruggiero, 2000, p.11-12). Previous research on digital inequalities has shown how psychological characteristics, such as attitudes or motivations, and social characteristics, such as demographics, both matter in explaining differentiated Internet uses and non-uses (Helsper and Reisdorf, 2013; Reisdorf and Groselj, 2015). Digital divide research

can thus profit from including aspects of motivational access (Van Dijk, 2005) and more psychologically and U&G-oriented research can profit from including social aspects.

From Access, to Uses, to Outcomes

Digital divide research suggests that online inequalities mirror offline inequalities. More specifically, demographic differences tend to be replicated online, with socio-economic disadvantages limiting access to the Internet use and restricting certain uses. The demographic antecedents most frequently investigated in the literature are education, income, gender, and age.

SES, usually measured by income and education, is a key construct in the digital divide literature. Users with high SES are believed to more easily take advantage of the Internet, because they command the necessary resources (material, human and social capital) to do so. These resources allow them better *access* to modern information and communication technologies (ICTs) (DiMaggio et al., 2004; Van Dijk, 2006), like broadband Internet connections, state-of-the-art smartphones or tablets. High SES users are also more likely to possess the necessary *skills* to use new media (Gui and Argentin, 2011; Hargittai, 2002, 2010; Van Deursen and Van Dijk, 2010). Moreover, Hargittai and Walejko (2008) found that higher SES is associated with more expressive Internet uses. Compared with low SES users, those with high SES also use the Internet in more capital-enhancing ways (Bonfadelli, 2002; Hargittai and Hinnant, 2008; Zillien and Hargittai, 2009). Education and income both have a positive effect on online participation (Gibson et al., 2005). Blank and Groselj (2015) argue that a more varied, complex view of participation shows that the effects of income and education should be separated. Some uses are influenced only by education and others only by income, still others are influenced by both.

As for *online benefits* the little evidence we have suggests that both education and income increase the positive outcomes of Internet use (Van Deursen and Helsper, 2015). Again, a nuanced understanding is necessary that considers users' life circumstances. Van Deursen and Helsper (2015) show, for example, that unemployed citizens profit more from using the Internet than employed citizens. Research suggests that social media can help some user segments find a job (Fieseler et al., 2014), obviously a very strong and positive Internet outcome.

We know little about how SES relates to *online harm*. For example, although there is a rich body of literature on cyberbullying, most studies focus on psychological rather than social determinants (Kowalski et al., 2014). In addition, these studies concentrate on youth and rarely cover older ages (see Livingstone and Smith, 2014). Among British respondents, bad experiences online ranged from 6% who had a credit card stolen to 30% who received virus (Dutton and Blank, 2013). A PEW study (Rainie et al., 2013) found that the prevalence of negative online outcomes varies from 4% of Internet users who "had something happen online that led them into physical danger", to 21% who "have had an email or social networking account compromised or taken over without their permission". Rates for other phenomena, such as online stalking and theft of important personal information (such as a social security number, credit card number or bank account number) fall in between, at 12% and 11% respectively. The survey results show that income is important: poorer Internet users are more susceptible.

As for *gender*, although overall differences in access to the Internet have almost levelled out in Britain (Dutton and Blank, 2013), inequalities remain in use of the Internet in specific areas. Online games or sexual content, for example, are male-dominated uses, while online health information is more popular among female users (Helsper, 2010: 356-357). Men are more active online than women in the political domain (Blank, 2013; Calenda and Meijer,

2009; Di Gennaro and Dutton, 2006). Blank and Groselj (2014) found that men tended to do more entertainment, content production, email and classic media. We know much less about gendered Internet outcomes. Van Deursen and Helsper's (2015) study suggests that only in the political domain, men profit more from using the Internet than females but not in the economic, social, institutional and educational domain. As for harms, the PEW survey mentioned does not mention gender differences or effects (Rainie et al. 2013). However, Livingstone and Smith (2014) summarize the existing evidence on gender differences in online risks among young people. For cyberbullying, they report inconsistent findings, inhibiting any clear conclusion. For sexual risks, boys seem to be slightly more likely than girls to have seen explicit content and receive sexual messages. However, girls are more likely to be sexually solicited and to post risky and sexually charged content. Given this evidence, we conclude that there are at best weak gender effects in terms of online harm and that we need more evidence across a broader age spectrum.

Age is almost always a strong predictor of Internet use and skills; younger users are typically more active and skillful (Bridges et al., 2012; Dahlgren, 2011; Hargittai, 2002, 2010; Jugert et al., 2013). On the other hand, the effect of age on online engagement and Internet benefits can be moderated by the users' interest, e.g., older users being more interested in politics (Gibson et al., 2005; Wang, 2007) and health. Outside of health and politics, young individuals generally tend to profit more from using online services than elderly ones (Van Deursen and Helsper, 2015). At the same time, they are also more at risk (Rainie et al., 2013): 23% of 18-29 year old US Internet users have been stalked or harassed online compared to 2% of those aged 50-64 (Rainie et al., 2013: 23).[2] Other evidence finds that at least some of the age differences might be due to age-related perception differences. Baek et al. (2014) find that younger Internet users reveal higher rates of comparative optimism than older users, seeing others substantially more endangered online than themselves.

There is also a methodological issue. The few studies using multivariate models to assess Internet outcomes have all used multivariate regression. This has complicated the testing of how differences in Internet benefits result from a multi-step understanding of divides. We use structural equation modelling to address this problem (see sub-section “Methods” for more information).

In summary, the digital divide literature provides preliminary evidence that demographics affect how individuals benefit and suffer from using the Internet. The characteristics of Internet use give us indications of what a corresponding divide in Internet outcomes would look like.

We consider age, gender, education, income and lifestage as independent demographic variables. We also consider four cognitive or attitudinal variables: concerns about bad experiences online, positive technology attitudes, confidence in the technological ability online (corresponding to self-efficacy), and privacy concerns. Figure 1 shows the research model. The model resembles the regression models used in previous digital divide research on Internet uses (Blank and Groselj, 2014; Correa, 2010; Van Deursen and Van Dijk, 2014, Zillien and Hargittai, 2009), but adds Internet use as a mediator and benefits/harms as the dependent variables.

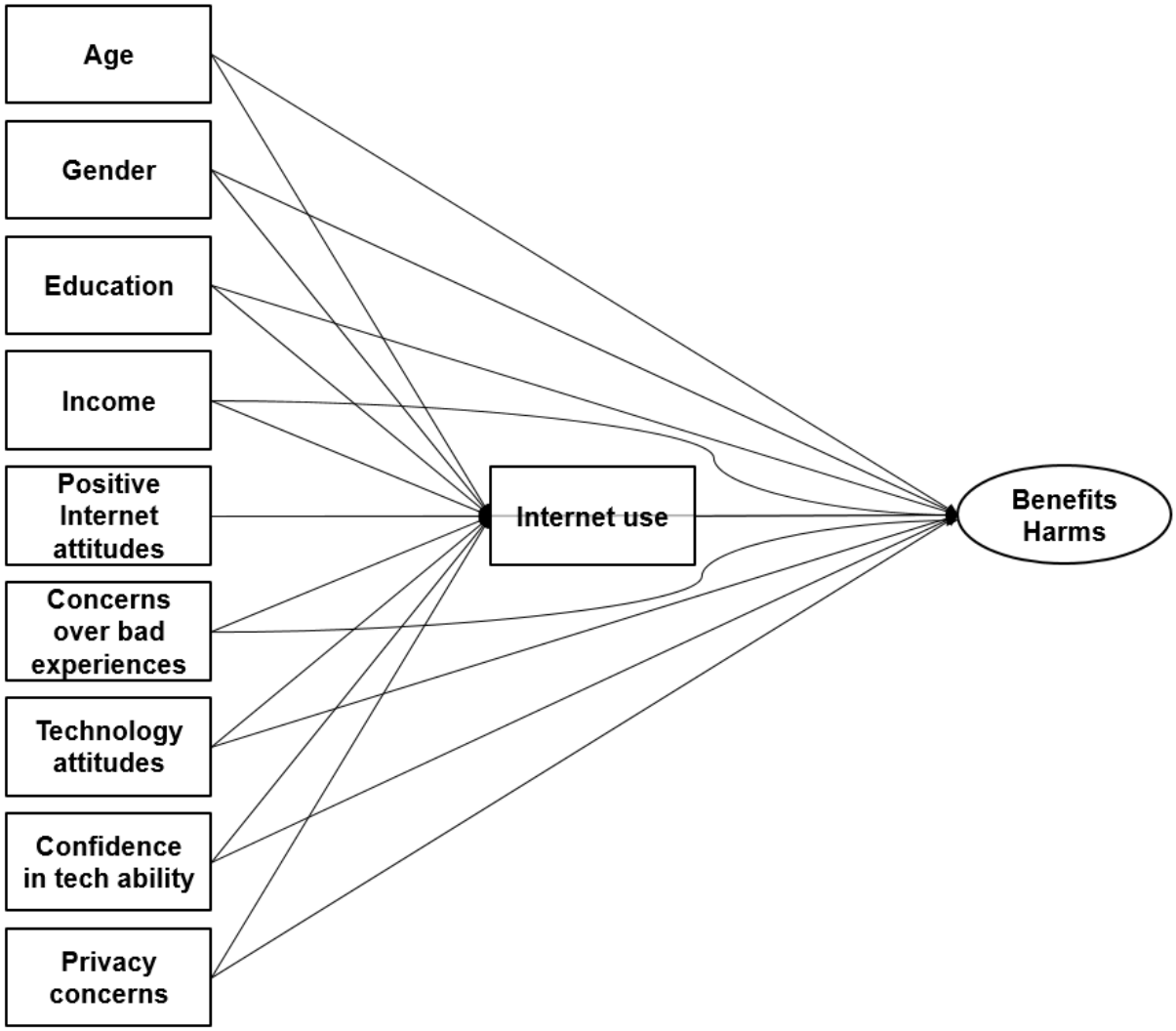


Figure 1: Research model

Methods

Data and Measures

The Oxford Internet Surveys (OxIS) collects data on British Internet users and non-users. Conducted biennially since 2003, the surveys are nationally representative random samples of more than 2,000 individuals aged 14 and older in England, Scotland, and Wales. Interviews are conducted face-to-face by an independent survey research company. The response rate for 2013 was 51%. Because OxIS uses a two-stage cluster sample design, we

used complex survey estimation to obtain correct variances (Dutton and Blank, 2013).

The questionnaire addresses the participants' Internet use and includes a broad range of attitudinal variables, such as trust and privacy concerns. We measured respondents' *online benefits* as a latent variable with three indicators. One item focuses on positive economic outcomes ("saved money"), one on social ones ("found out about an event") and the last one on health-related benefits ("found information that helped improve my health"). Another item from that set of questions ("found a job") had to be dropped because it did not load with the other items in a preliminary principal components analysis. Information on the individual variables is available in the Tables B1 and B2 in Appendix B. The measure for *online harms* is a latent variable with six indicators—receive a virus, a misrepresented product, a request for bank details, receive spam, accidently encountering a pornographic website, and having credit card details stolen—with a Cronbach's alpha of 0.72. For *Internet use*, we relied on an additive index of 43 Internet activities, spanning a broad range of online behaviours (see Blank and Groselj, 2014; 2015) for the list of items as well as a full discussion of the index). These activities were assessed on a six point scale, ranging from "never" (0) to "several times a day" (5). The categories in between are: "less than monthly" (1), "monthly" (2), "weekly" (3) and "daily" (4). The index measures the amount dimension of Internet use, not the type and variety dimensions (Blank and Groselj, 2014). We decided not to include the 12 types of use in this exploratory analysis because that would have added much complexity to this exploratory research; types of use is another paper. We decided against the variety dimension because the amount, as operationalized in Blank and Groselj (2014), is a more encompassing assessment of Internet use than variety. Given that this study is only a first step in investigating Internet outcomes, future researchers are encouraged to explore other measures of Internet use, such as specific types.

For income, we used the yearly household income before tax, and for education we asked for the highest educational or vocational qualification on a four category scale (no qualifications, secondary education, further education, higher education). The lifestage variable consists of four categories: student, employed, retired, unemployed. Several variables deal with attitudes. We assessed respondents' *privacy concerns* with one item: "Use of computers and the Internet threatens personal privacy." Respondents could agree or disagree on a five-point Likert scale. We included a scale that assesses respondents' *positive technology attitudes* and covers a range of 0 to 24. *Concerns over bad experiences* measured more negative attitudes towards the Internet, connected with fears. The item consists of a scale with values 0-9. Finally, we assessed users' *self-efficacy* or *online confidence in their technological ability* with a scale that covered a range from 0 to 20. The construction, content and reliability of these scales has been documented in previous papers (Blank and Dutton, 2012; Blank and Dutton, 2013). We did not include skills as this variable correlated too strongly with self-efficacy/confidence in the technological ability and led to a misspecification of the model. All these variables were included as manifest variables in the models.

Method

We relied on structural equation modelling (SEM) using Stata version 13.1 to address the research questions. In contrast to ordinary regression analysis, SEM can address indirect effects and latent variables, and it provides global goodness fit measures to allow for model comparisons. Moreover, it includes measurement errors in the specification of the model, as it combines regression and (confirmatory) factor analysis. It is thus a more versatile and advanced method than regression. Previous studies on online benefits relied on regression (e.g. Van Deursen and Helsper, 2015), complicating tests for indirect effects.

Results

Figures 2 and 3 show the distribution of the dependent variables. More respondents experience the benefits of the Internet rather than harms. Only 17% of Internet users in the UK have not experienced one of the three Internet benefits: finding out about an event, saving money and finding information that helped improve my health. By contrast, one third of the sample enjoy all the three benefits, while almost half (around 49%) report one or two of the three benefits. Looking at the harms, a different picture – and a skewed distribution – emerges. Most respondents, 57%, have not experienced any of the harms in the last year. 18% have experienced one threat and 13% two of them. Overall, benefits seem to be more widespread than harms (despite limited comparability given the difference in measurement).

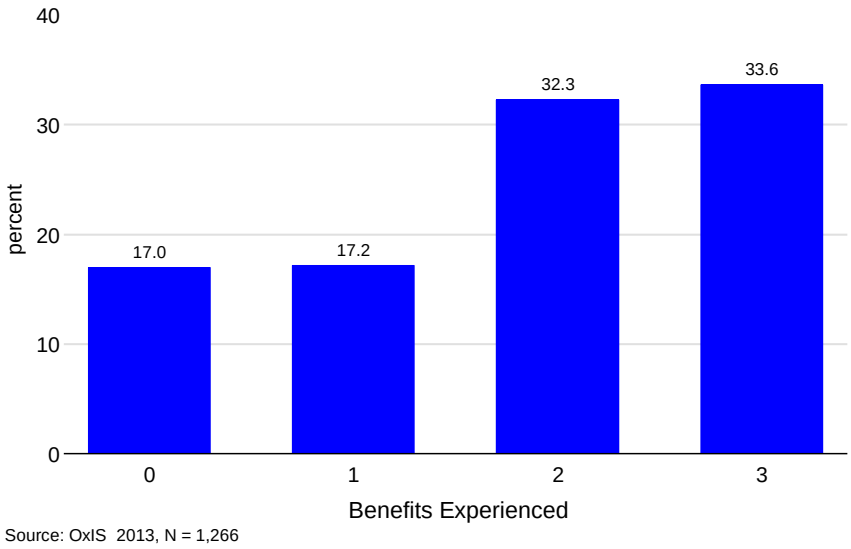


Figure 2: Distribution of online benefits

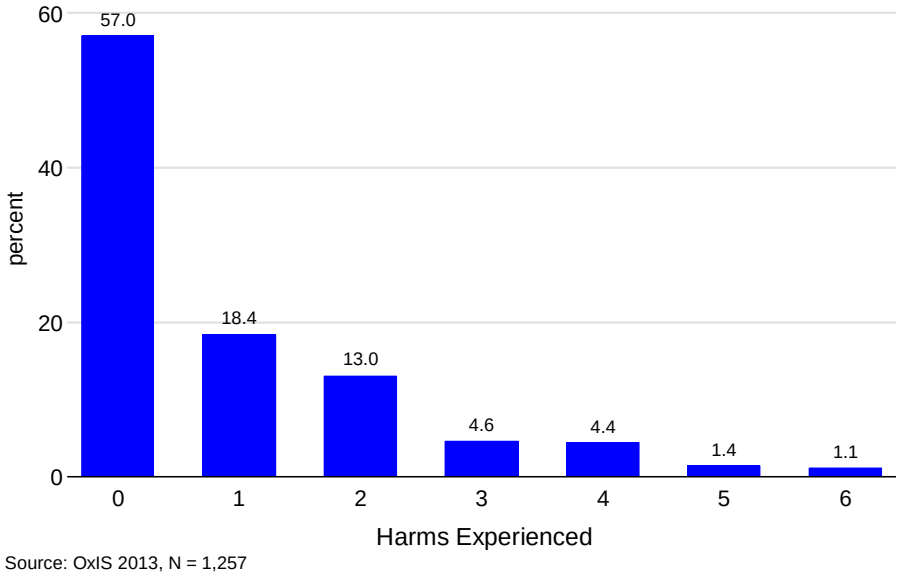
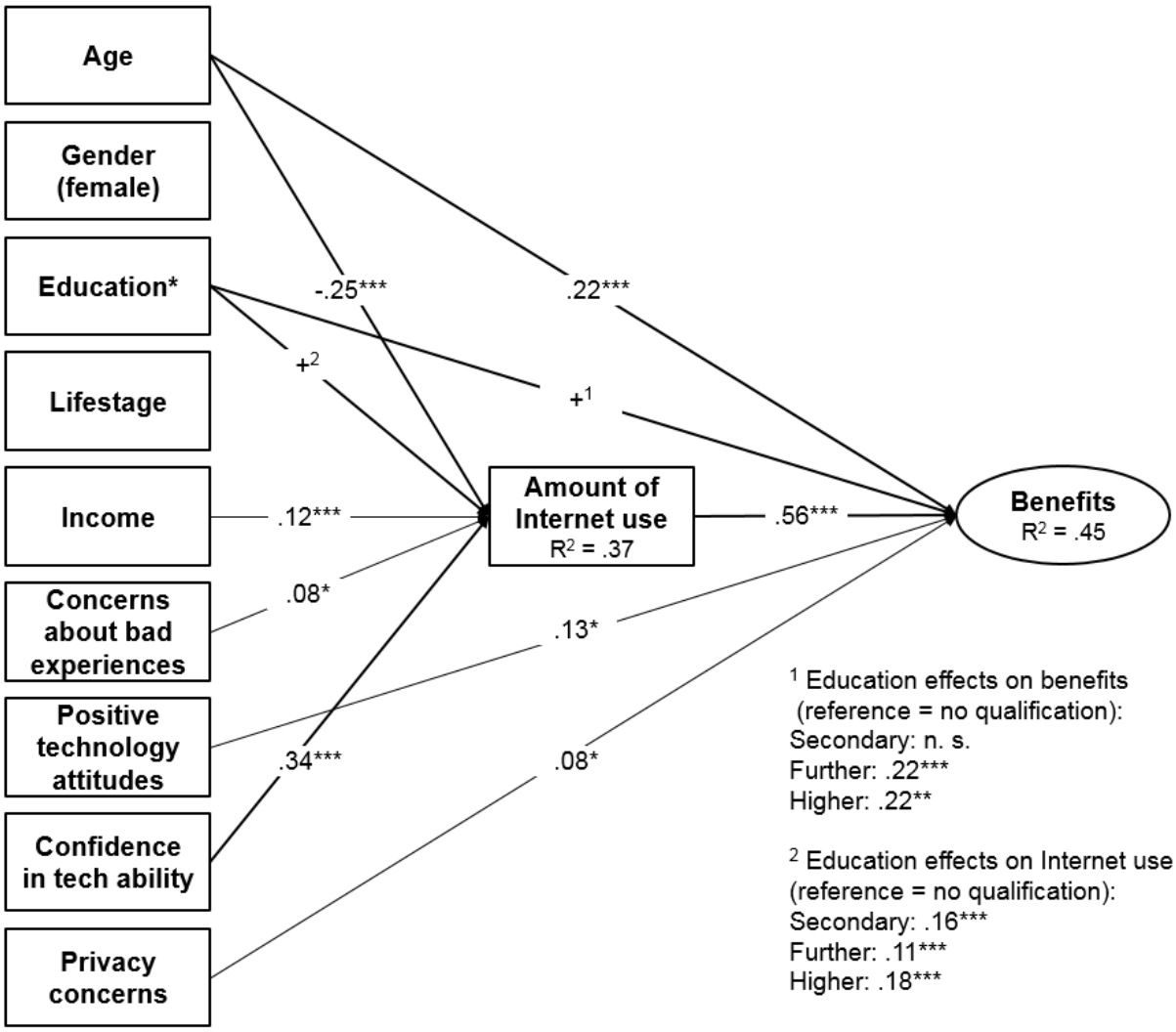


Figure 3: Distribution of online harms

Figure 4 shows the results of the benefit model including only the statistically significant paths (see Appendix D for the full results); Table 1 contains the fit statistics for both the benefits and the harms models. As expected, the amount of Internet use has a strong effect on the benefits from using it. Around one third of the overall variance in Internet benefits is explained by the amount of use ($0.56^2=0.314$). This shows that the Internet is an experience technology where benefits increase with use (Dutton & Shepherd, 2006; Blank & Reisdorf, 2012).



Notes: ***: $p < 0.001$ **: $p < 0.01$ *: $p < 0.05$; N=1,266; standardized path coefficients; absent paths = not significant; See Table 1 for goodness of fit statistics.

Figure 4: Results for the Internet benefits model

Looking at the social structuration of the *amount* of Internet use, we find results that parallel previous research on digital divides: age affects the amount of Internet use negatively and it is the second largest coefficient, while income and education have a positive effect. Self-efficacy or confidence in one's technical ability is the strongest predictor. Individuals who report higher levels of self-efficacy also use various Internet applications more frequently than those who report low levels. Attitudes matter as well. Positive technology attitudes foster the amount of Internet use (but the coefficient is marginal). Surprisingly, those who report higher

levels of concern about bad experiences online use it more. Finally, privacy concerns do not have an impact on the amount of Internet use – a finding that is consistent with the literature on the privacy paradox (Kokolakis, 2015).

Table 1: Goodness of fit statistics for both Benefits and Harms models

Fit Values	**Benefits**	**Harms**
Coefficient of determination (CD)	0.47	0.44
Standardized root mean square residual (SRMR)	0.02	0.02
R^2	0.45	0.26
N	1,266	1,257
Chi-square*	91.4 P < 0.00 df = 28	132.2 P < 0.00 df = 79
Root mean square error of approximation (RMSEA)*	0.04	0.02
Comparative fit index (CFI)*	0.96	0.97
Tucker-Lewis index (TLI)*	0.92	0.96

*Chi-square, RMSEA, CFI and TLI were added at the request of an anonymous referee. They cannot be estimated when using complex survey estimation so these are estimated by rerunning the model as if it had been a simple random sample. Readers should interpret them with caution.

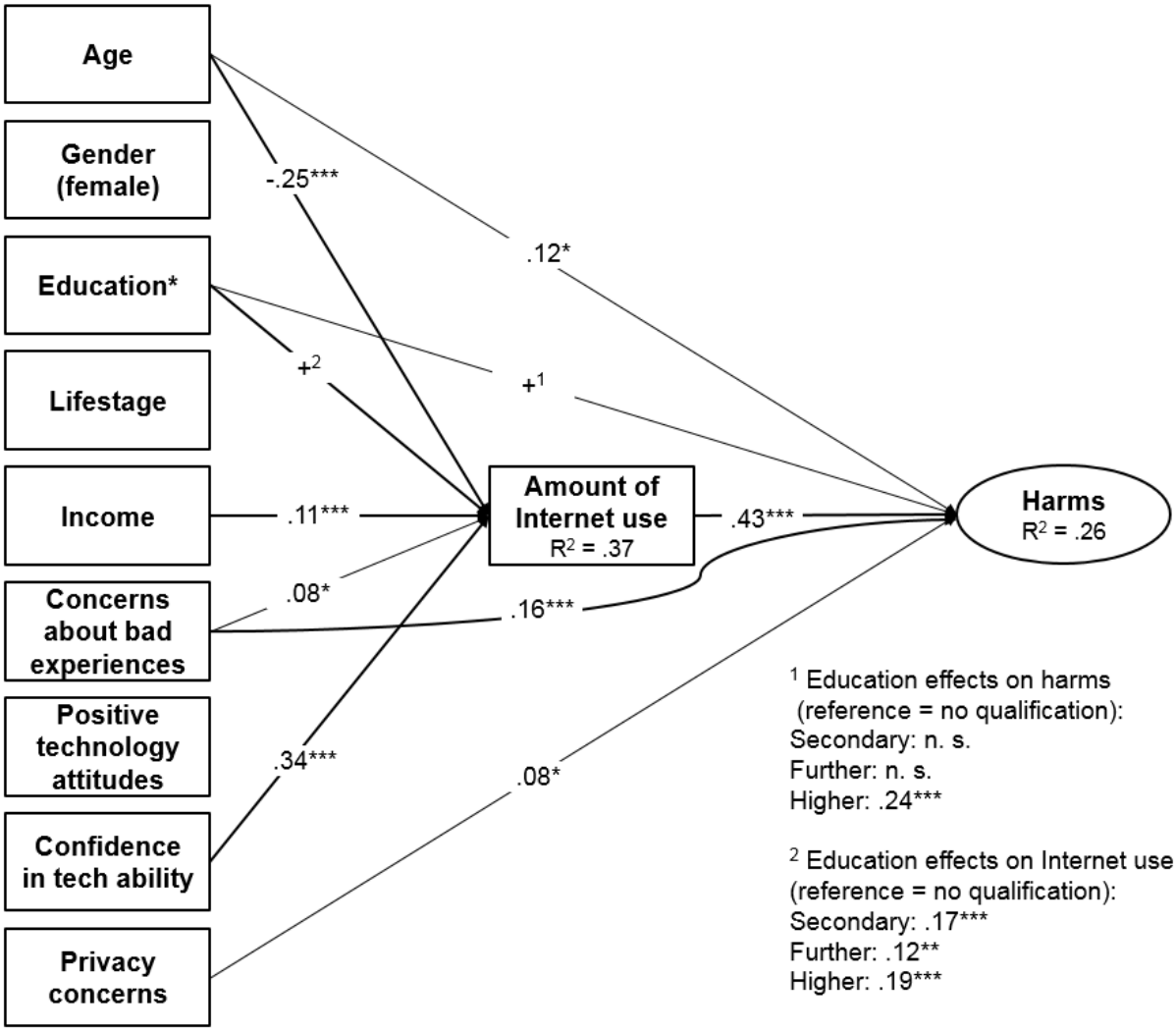
More interesting than the structuration of amount of use is the structuration of *benefits*. Here we find some noteworthy results. The sign of age reverses; age is positive: Elderly users benefit more from using the Internet than younger ones. Age is the second largest effect, after amount of Internet use. Gender is not significant, indicating that women and men profit equally from using the Internet. Education exerts a positive influence, while income does not. Thus, better educated individuals benefit more from using the Internet. High income individuals, although they use the Internet more, do not benefit from it more than low income individuals. None of the lifestage variables are significant. These demographic effects are partly consistent with previous research on the digital divide but they also partly contradict it. Given the

widespread belief that the young are digital natives the fact that elderly users benefit more from the Internet comes as a surprise. We return to this in the discussion.

As for the cognitive and attitudinal constructs, we find significant positive effects for technology attitudes and privacy concerns. Respondents with more positive technology attitudes and more privacy concerns report more benefits from using the Internet than those with negative attitudes and fewer privacy concerns. The finding for technology attitudes shows that a positive and proactive stance leads to more positive experiences – again confirming that the Internet is an experience technology (Dutton & Shepherd, 2006; Blank and Reisdorf 2012). The positive effect of privacy concerns runs counter to intuitions that privacy concerns inhibit beneficial use of the Internet and lead to a restricted online behaviour. This seems not to be the case. Although privacy is unrelated to use, those with strong privacy concerns benefit more strongly from the Internet than those with few privacy concerns.

Interestingly the harms model (Figure 3) is similar to the benefits model. Total use, age, education and privacy concerns are all positively related to harms. The surprise there is that more Internet use not only leads to more benefits but also more harms. This might be due to the fact Internet benefits are more widespread than harms (see Figures 2 and 3, above). Older people and more educated people are more likely to experience harms, even after controlling for amount of use. We return to these issues in the discussion.

Men and women seem to experience the same level of harms as well. Concern about bad experiences and concern about privacy are also positively related to harms. Certainly the more harms people have experienced, the more likely they are to be concerned. Positive technology attitudes are also unrelated to the experience of harms, although they have a strong effect on benefits. Adding the cognitive constructs and demographic variables as predictors of the harms experienced increases the explained variance by around 8%.[3]



Notes: ***: $p < 0.001$ **: $p < 0.01$ *: $p < 0.05$; N=1,257; standardized path coefficients; absent paths = not significant; See Table 1 for goodness of fit statistics.

Figure 5: Results for the Internet harms model

Figure 4 and Figure 5 show benefits and harms models separately. We ran a combined model including both benefits and harms, and estimating a covariance between the residual variances of harms and benefits. The substantive results from the combined model do not differ from the separate models.

The fact that benefits and harms have many identical predictors suggests a positive relationship. Figure 6 plots the predicted values from both the harms and benefits models,

showing a strong relationship; the Pearson product moment correlation is 0.82. The conclusion is that people who experience the most benefits also experience the most harms. Clearly experiencing problems does not put people off from using the Internet. Note the linear relationship between benefits and harms, suggesting that there is no "threshold effect" beyond which harms begin to depress Internet activity.

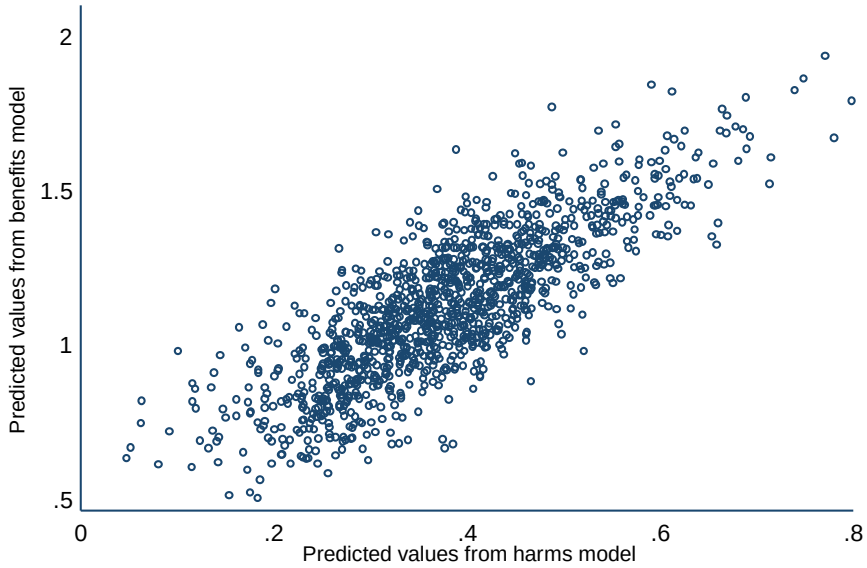


Figure 6: Scatterplot of predicted benefits and harms

Discussion

Summary and Implications

In this study we investigated the digital divide in outcomes of Internet use in the UK. Using a large, representative survey, we compared the social profiles of the benefits and harms associated with using the Internet. The findings on benefits follow existing digital divide findings on access, skills, uses and participation, in the sense that highly educated, high income younger users tend to be privileged in all or some of these aspects (Blank, 2013; Brake, 2014; Correa, 2010; Hargittai, 2002, 2010; Hargittai and Hinnant, 2008; Hargittai and Shafer, 2006; Hargittai and Walejko, 2008; Van Deursen and Van Dijk, 2010; 2014; Van Deursen and

Helsper, 2015; Van Dijk, 2006; Zillien and Hargittai, 2009). The findings also confirm the U&G theory postulate that groups with different demographic and social characteristics will use the Internet to gratify different needs. We discuss several groups below.

Elderly users receive more benefits. This is surprising because in previous research on the digital divide Internet use is inversely related to age. Age and benefits have a weak, negative relationship at a zero-order level, with a Pearson's correlation of -0.11. Once we control for other demographics and for attitudes, the relationship becomes strongly positive. What this says is that once older people are online, they benefit more. Several causes are possible. One possibility is that older people lead more complex lives and so they have more opportunities to benefit. Since our measure of benefits is, unlike those used by other researchers, a latent variable composed of multiple manifest variables, someone with a more complex life would have more opportunities to take advantage of the Internet. For example, a young person who is basically healthy is less likely to have looked for online health information. Similarly older people with child-rearing expenses or living on fixed incomes may be looking more actively for ways to save money. Another possibility is that older users use the Internet for different purposes than younger users. One possibility is if younger users used the Internet more for entertainment while older users used it for more serious uses like saving money. Another possibility is the role of technology attitudes. Older people tend to have a less positive attitude toward technology than younger people; however, those older people with positive technology attitudes tend to benefit from the Internet at least as much as if not more than younger people (Cotten et al., 2012; Cotten et al., 2013; Tsai et al., 2015). Controlling for technology attitudes may allow the beneficial possibilities of Internet use shine through for older people. This is one area where the optimists may be correct: older people receive disproportionate benefits from the Internet. It certainly looks like an area where more research would be fruitful.

The picture for harms is complex and does not follow the predictions of digital inequality research – where we would expect digitally unsophisticated users to be most at risk; for example, users who are low income, badly educated, or elderly. Of all the demographic predictors in the model, only age and education have a significant effect. Older users are more likely to experience harms, and that is consistent with digital inequality research. However, the positive effect of education on harms is a surprise that invites explanation. One might expect that education would equip people to be more savvy users who are better able to take precautions to avoid harms. Blank and Groselj (2014) find that education is positively related to almost every type of use. This suggests that educated Internet users use a wider range of applications; some of those applications, such as e-banking and online-shopping, may carry a higher risk of bad experiences. It could also be that more educated users are more experimental in their surfing behaviour and this exposes them to greater risks. Qualitative ethnographic research would be helpful to understand such education differences in more depth. Qualitative studies among young Internet users (e.g., Robinson, 2009; Sims, 2014) indicate that incorporated social structures or habitus in a Bourdieuian sense can partly account for differentiated Internet use practices (Lutz, 2016). Following this argument, which is partly consistent with the omnivores thesis developed in cultural sociology (Peterson & Kern, 1996), higher SES users develop a more playful and exploratory habitus of using the Internet, which might result in exposure to more negative content and harms.

Possibly the most surprising finding is that both benefits and harms are strongly, positively related to each other. Clearly people who use the Internet a lot also experience a disproportionate number of problems. Benefits and harms are not mutually exclusive. People who experience harms like viruses, misrepresented goods, or credit card theft may simply regard them as the cost of being on the Internet. For them the benefits may outweigh the risks. Nonetheless, the close relationship of harms and benefits shown in Figure 6 is surprising and

it suggests the need for further research. It would be particularly interesting to have qualitative research that asked respondents to explain in their own words how they understood the risks and benefits of the Internet.

For many people it may not be possible to avoid the Internet. It is so closely-integrated into their work lives, family and social relationships that they have to be active Internet participants. This sometimes more or less forced participation is an interesting case for U&G theory, which has typically examined purely voluntary action (Blumler & Katz, 1974). Connecting with people in social relationships is clearly an important gratification and that may promote use of certain Internet technologies like social media.

Our findings contribute to the current debate on digital inequality by systematically investigating the outcomes of Internet use. Previous research has primarily looked at differences in access, skills, uses or participation. However, some important conceptual work on the digital divide has stressed the role of outcomes (DiMaggio et al., 2004; Van Dijk, 2005). The research stream on digital outcomes is still in its infancy. Previous research on digital inequalities has made important contributions but only considered positive outcomes, neglecting the harms people can experience online. The descriptive statistics show that users experience benefits more often than they experience harms. Still, a substantial number of citizens have had some negative experiences. Neglecting these experiences is a serious shortcoming of previous research that we tried to address in this contribution. We showed that the profile of those most affected by harm is not fundamentally different from those affected by benefits. In fact, our analyses showed that those benefiting most from using the Internet tend to be those most susceptible to harms – possibly restricting the scope of benefits. How much the harms actually limit the benefits is an open question that future research should address.

Finally, our analysis also showed the value of including attitudinal and cognitive predictors into the study of digital inequalities, following previous research that has successfully done so (Blank and Groselj, 2015; Hoffmann et al., 2015; Reisdorf & Groselj, 2015). The effects of negative attitudes or concerns seem to be more pronounced for harms and the influence of positive attitudes stronger for benefits. The role of privacy concerns is especially interesting. They positively affect both the benefits and harms from using the Internet. However, given the small effect sizes, future studies might want to include measures of users' privacy literacy or privacy awareness (Park, 2013). Previous research has shown that higher levels of privacy literacy (Bartsch and Dienlin, 2016) or privacy awareness (Park, 2013) lead to a more controlled and safer use of social network sites, possibly limiting the harm and increasing the benefits.

In summary, this contribution adds to existing research on digital inequality by considering both positive and negative outcomes. We find evidence that socio-economically privileged individuals benefit most from using the Internet. At the same time, they also experience most harm from its use, leaving us with a somewhat paradoxical situation to disentangle.

Limitations and Suggestions for Future Research

This research has limitations that limit its scope and provide avenues for future research. First, research on Internet outcomes is only in its infancy and we therefore present a relatively straightforward model, which allows for the comparison with previous research. Helsper et al. (2015) suggest a much larger set of variables to measure benefits, constructing four major scales and 10 subscales. However, they do not do principal components analyses on any of their proposed scales, nor do they give any Cronbach's alphas, so it is hard to judge the quality of the suggested scales. The empirical literature on types of Internet use includes many identical

or similar items (see summary in Blank and Groselj, 2014) and the empirical results in that literature suggest that many of their proposed scales may not cohere empirically. The amount of missing data—the total of Don't Know plus Not Applicable—is extraordinarily high, on individual items it ranges from a minimum of 36% up to 97% (Helsper et al., 2015, Appendix B). This suggests further work is needed before standard items are available, but the need for research on a wider range of outcomes is clear.

Second, we define harms as damaging outcomes that people suffer resulting from their Internet use. However, harms can also be thought of as missed opportunities due to such constraints as lack of broadband use, or failure to be promoted because of weak Internet skills. These are foregone opportunities that may form structural barriers limiting opportunities for the poor or uneducated. Since they also have an effect on social mobility they should also be part of digital inequality research.

Third, the data are from a cross-sectional survey in the UK. Inferences across time are not possible and the issue of isolating different causal effects (e.g., of the cognitive constructs on Internet benefits and harms) remains. Future research on Internet outcomes could use panel designs to describe and explain changes over time, and in other countries as well.

Fourth, it seems reasonable that both harms and benefits could be multi-dimensional, in particular U&G theory suggests a multi-dimensional organization of benefits (e.g. Katz, Haas & Gurevitch, 1973). One of our interesting results is that both harms and benefits form a single empirical dimension. Nonetheless, this deserves further research. We have not used as many types of benefits as U&G research. Would an expanded set of harms or benefits produce additional dimensions? What would be the characteristics of these dimensions?

Fifth, additional explanatory factors should be included in the research model. When it comes to the demographics, family status and occupational status are important predictors of

Internet benefits. We did not include this information in our models for the sake of parsimony. Future studies might include broader indicators of users' social and cultural background.

Finally, we had to rely on self-reported data. Such data is subject to challenges such as memory bias and social desirability. Digital inequalities research should therefore combine different data sources, including observational data. Overall, this study contributes to the research of online outcomes by being one of the first investigations of Internet outcomes at all, and – to our knowledge – the first to systematically assess with a high quality, broad sample how the profiles of benefits and harms differ.

Endnotes

[1] An exception is the large literature on risks for children, see Livingstone and Smith (2014).

[2] These are bivariate analyses, not controlling for the actual use of the Internet (in terms of amount and types). At the same time, the age differences seem to be large enough to support an age effect.

[3] This is calculated as follows: the squared effect of amount of Internet use on harms – and thus the amount of variance explained by Internet use – is 0.18 and the total R^2 is 0.26. Hence the demographic predictors and cognitive constructs together account for around 8% of the total variance.

References

Ancu M and Cozma R (2009) MySpace politics: Uses and gratifications of befriending candidates. *Journal of Broadcasting & Electronic Media* 53(4): 567–583.

Baek YM, Kim EM and Bae Y (2014) My privacy is okay, but theirs is endangered: Why comparative optimism matters in online privacy concerns. *Computers in Human Behavior* 31: 48–56.

Bandura, A (1986) *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.

Bartsch M and Dienlin T (2016) Control your Facebook: An analysis of online privacy literacy. *Computers in Human Behavior* 56: 147-154.

Bimber B (2001) Information and political engagement in America: The search for effects of information technology at the individual level. *Political Research Quarterly* 54(1): 53–67.

Blank G (2013) Who creates content? Stratification and content creation on the Internet. *Information, Communication & Society* 16(4): 590-612.

Blank G and Dutton WH (2013) The emergence of Next Generation Internet users" pp. 122-141 in John M. Hartley, Jean Burgess & Axel Bruns (eds) *Blackwell companion to new media dynamics*. London: Blackwell.

Blank G and Groselj D (2014) Dimensions of Internet use: amount, variety, and types. *Information, Communication & Society* 17(4): 417-435.

Blank G and Groselj D (2015) Examining Internet Use Through a Weberian Lens. *International Journal of Communication* 9: 2763-2783.

Blank G and Reisdorf BC (2012) The participatory web: A user perspective on Web 2.0. *Information, Communication & Society* 15: 537-554.

Blumler JG and Katz E (1974) *The uses of mass communications: current perspectives on gratifications research*. Thousand Oaks, CA: Sage Publications.

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

Boulianne S (2009) Does Internet use affect engagement? A meta-analysis of research. *Political Communication* 26(2): 193–211.

Bridges F, Appel L and Grossklags J (2012) Young adults' online participation behaviors: An exploratory study of web 2.0 use for political engagement. *Information Polity* 17(2): 163–176.

Calenda D and Meijer A (2009) Young people, the Internet, and political participation. *Information, Communication & Society* 12(6): 879–898.

Correa T (2010) The participation divide among 'online experts': Experience, skills and psychological factors as predictors of college students' web content creation. *Journal of Computer-Mediated Communication* 16(1): 71–92.

Cotten SR., Anderson WA and McCullough BM (2013) Impact of internet use on loneliness and contact with others among older adults: cross-sectional analysis. *Journal of Medical Internet Research* 15(2).

Cotten, SR, Ford G, Ford S and Hale, TM (2012) Internet use and depression among older adults. *Computers in Human Behavior* 28(2): 496-499.

Dahlgren P (2011) Young citizens and political participation: Online media and civic cultures. *Taiwan Journal of Democracy* 7(2): 11–25.

December J (1996) Units of analysis for internet communication. *Journal of Computer-Mediated Communication* 1(4), 0-0. doi:10.1111/j.1083-6101.1996.tb00173.x

Di Gennaro C and Dutton W (2006) The Internet and the public: Online and Offline Political Participation in the United Kingdom. *Parliamentary Affairs* 59(2): 299–313.

DiMaggio P, Hargittai E, Celeste C and Shafer S (2004) Digital inequality: From unequal access to differentiated use. In: Neckerman KM (ed) *Social Inequality*. New York: Russell Sage Foundation, 355–400.

Dutton WH and Blank G with Groselj D (2013) *Cultures of the Internet: The Internet in Britain, The Oxford Internet Survey 2013* Oxford: Oxford Internet Institute.

Dutton WH and Blank G (2014) The emergence of Next Generation Internet users. *International Economics and Economic Policy*. 11:29-47.

Dutton WH and Shepherd A (2006) Trust in the Internet as an experience technology. *Information, Communication & Society* 9(4): 433-451.

Ellison N, Steinfield C and Lampe C (2007) The benefits of Facebook 'friends': Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication* 12(4): 1143–1168.

Fieseler C, Meckel M and Müller S (2014) With a little help of my peers. The supportive role of online contacts for the unemployed. *Computers in Human Behavior* 41: 164–176.

Gibson RK, Lusoli W and Ward S (2005) Online participation in the UK: Testing a 'contextualised' model of Internet effects. *The British Journal of Politics and International Relations* 7(4): 561–583.

Gil de Zúñiga H, Veenstra A, Vraga E and Shah D (2010) Digital democracy: Reimagining pathways to political participation. *Journal of Information Technology & Politics* 7(1): 36–51.

Gross R and Acquisti A (2005) Information revelation and privacy in online social networks (The Facebook case). In: *Proceedings of the ACM Workshop on Privacy in the Electronic Society (WPES)*, Alexandria, VA, November 2005, 1–11.

Gui M and Argentin G (2011) Digital skills of Internet natives: Different forms of digital literacy in a random sample of northern Italian high school students. *New Media & Society* 13(6): 963–980.

Hargittai E (2002) Second-level digital divide: Differences in people's online skills. *First Monday, 7*(4): 1–18.

Hargittai E (2010) Digital na(t)ives? Variation in Internet skills and uses among members of the net generation. *Sociological Inquiry* 80(1): 92–113.

Hargittai E and Hinnant A (2008) Digital inequality: Differences in young adults' use of the Internet. *Communication Research* 35(5): 602–621.

Hargittai E and Shafer S (2006) Differences in actual and perceived online skills: The Role of gender. *Social Science Quarterly* 87(2): 432–448.

Hargittai E and Walejko G (2008) The participation divide: Content creation and sharing in the digital age. *Information, Communication & Society* 11(2): 239–256.

Helsper E (2010) Gendered internet use across generations and life stages. *Communication Research* 37(3): 352–374.

Helsper E and Reisdorf BC (2013) A quantitative examination of explanations for reasons for internet nonuse. *Cyberpsychology, Behavior, and Social Networking* 16(2): 94-99.

Helsper E, Van Deursen A and Eynon R (2015) Tangible Outcomes of Internet Use. From Digital Skills to Tangible Outcomes Project Report.

Hoffmann CP, Lutz C and Meckel M (2015) Content creation on the Internet: A social cognitive perspective on the participation divide. *Information, Communication & Society* 18(6): 696-716.

Jugert P, Eckstein K, Noack P, Kuhn A and Benbow A (2013) Offline and online civic engagement among adolescents and young adults from three ethnic groups. *Journal of Youth and Adolescence* 42(1): 123–35.

Kane GC, Alavi M, Labianca G and Borgatti SP (2014) What's different about social media networks? A framework and research agenda. *MIS Quarterly* 38(1): 274–304.

Katz E, Haas H and Gurevitch M (1973) On the use of the mass media for important things. *American Sociological Review* 38(1): 164-181.

Kowalski RM, Giumetti GW, Schroeder AN and Lattanner MR (2014) Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin* 140(4): 1073–1137.

Kokolakis S (2015) Privacy attitudes and privacy behaviour: A review of current research on the privacy paradox phenomenon. *Computers & Security* 00: 1–13. doi: 10.1016/j.cose.2015.07.002

Lacey N (2002) *Media Institutions and Audiences: Key Concepts in Media Studies*. Basingstoke: Palgrave Macmillan.

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): 358–377.

Livingstone S and Smith PK (2014) Annual research review: Harms experienced by child users of online and mobile technologies: the nature, prevalence and management of sexual and aggressive risks in the digital age. *Journal of Child Psychology and Psychiatry* 55(6): 635–654.

Lundy LK, Ruth AM and Park TD (2008) Simply irresistible: Reality TV consumption patterns. *Communication Quarterly* 56(2): 208–225.

Lutz C (2016) A social milieu approach to the online participation divides in Germany. *Social Media + Society* 2(1): 2056305115626749.

Lutz C, Hoffmann CP and Meckel M (2014) Beyond just politics: A systematic literature review of online participation. *First Monday* 19(7).

Morris M and Ogan C (1996) The Internet as mass medium. *Journal of Computer-Mediated Communication* 1(4), 0–0.

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

Park YJ (2013) Digital literacy and privacy behavior online. *Communication Research* 40(2): 215-236.

Peterson RA and Kern RM (1996) Changing highbrow taste: From snob to omnivore. *American Sociological Review* 61(5): 900-907.

Quan-Haase A and Young AL (2010) Uses and gratifications of social media: A comparison of Facebook and instant messaging. *Bulletin of Science, Technology & Society* 30(5): 350-361.

Rainie L, Kiesler S, Kang R, Madden M, Duggan M, Brown S and Dabbish L (2013) Anonymity, privacy, and security online. Pew Research Center. Retrieved from http://www.pewinternet.org/2013/09/05/anonymity-privacy-and-security-online/

Reisdorf BC and Groselj D (2015) Internet (non-) use types and motivational access: Implications for digital inequalities research. *New Media & Society* online first. doi: 1461444815621539.

Robinson L (2009) A taste for the necessary: A Bourdieuian approach to digital inequality. *Information, Communication & Society* 12(4): 488-507.

Rubin AM (2009) The uses-and-gratifications perspective on media effects. In: Bryant J and Oliver MB (eds) *Media Effects: Advances in Theory and Research* (3rd ed). New York: Routledge, 165–184.

Ruggiero TE (2000) Uses and gratifications theory in the 21st century. *Mass Communication & Society* 3(1): 3–37.

Shah DV, Cho J, Eveland WP Jr and Kwak N (2005) Information and expression in a digital age: Modeling Internet effects on civic participation. *Communication Research* 32(5): 531–565.

Sims C (2014) From differentiated use to differentiating practices: Negotiating legitimate participation and the production of privileged identities. *Information, Communication & Society* 17(6): 670-682.

Stafford TF, Stafford MR and Schkade LL (2004) Determining uses and gratifications for the Internet. *Decision Sciences* 35(2): 259–288.

Tsai HYS, Shillair R and Cotten, SR (2015) Social Support and "Playing Around" An Examination of How Older Adults Acquire Digital Literacy With Tablet Computers. *Journal of Applied Gerontology* online first: 0733464815609440.

Van Deursen A and Helsper EJ (2015) The Third-Level Digital Divide: Who Benefits Most from Being Online? *Communication and Information Technologies Annual (Studies in Media and Communications)* 10: 29-52.

Van Deursen A and Van Dijk J (2010) Internet skills and the digital divide. *New Media & Society* 13(6): 893–911.

Van Deursen A and Van Dijk J (2014) The digital divide shifts to differences in usage. *New Media & Society* 16(3): 507–526.

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

Van Dijk J (2006) Digital divide research, achievements and shortcomings. *Poetics* 34(4-5): 221–235.

Van Ingen E and Matzat U (2015) Mobilizing coping resources online: The role of education, digital skills, and capital-enhancing Internet use in creating digital inequality. *2015 Annual Conference of the International Communication Association (ICA),* San Juan (Pueto Rico), 21-25 May.

Wang S-I (2007) Political Use of the Internet, Political Attitudes and Political Participation. *Asian Journal of Communication* 17(4): 381–395.

Woodly D (2007) New competencies in democratic communication? Blogs, agenda setting and political participation. *Public Choice* 134(1-2): 109–123.

Zhang W, Johnson TJ, Seltzer T and Bichard SL (2009) The Revolution Will be Networked: The Influence of Social Networking Sites on Political Attitudes and Behavior. *Social Science Computer Review* 28(1): 75–92.

Zillien N and Hargittai E (2009) Digital Distinction? Status-Specific Types of Internet Usage. *Social Science Quarterly* 90(2): 274–291.

Appendices

Appendix A. Question wording

Construct	Item	Wording (Scale)
Online Benefits		*Have you ever…*
	Money	*…saved money buying something online?*
	Event	*…first found out about an event through the Internet?*
	Health	*…found online information that helped you improve your health?*
Online Harms		*In the past year have you ever*
	Virus	*…received a virus onto your computer?*
	Misrep.	*…bought something which was misrepresented on a website?*
	Bank	*…been contacted by someone online asking you to provide bank details?*
	Porn	*…accidentally arrived at a pornographic website when looking for something else?*
	Spam	*…received obscene or abusive e-mails?*
	Stolen	*…had your credit card details stolen via use on the Internet?*
Total Internet Use	Total use	See Blank and Groselj, 2014; Blank and Groselj, 2015

Note the differences in question wording. The benefits are worded differently because people do not search for a job every year and they only search for health information when they have a health problem. Harms, on the other hand, are imposed by other people and so asking about recent experience makes more sense.

Appendix B. Construct Frequencies

Table B1: Online benefits (%)

	Saved money	*Found event*	*Improved health*
Yes	75.0	64.2	46.5
No	25.0	35.8	53.5
Total	100.0	100.0	100.0

Note: N = 1,266

Table B2: Online harms (%)

	Bank	*Misrep*	*Porn*	*Virus*	*Spam*	*Stolen*
Yes	19.5	11.7	12.5	29.1	10.1	5.9
No	80.5	88.3	87.5	70.9	89.9	94.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: N = 1,260, except *Spam* N = 1,259 & *Stolen* N = 1,258

Appendix C. Structural model of benefits

	Standardized path coefficient	Robust standard error	t	p-value
Benefit is dependent				
Amount of use	0.56	0.05	10.16	0.00
Age	0.22	0.06	3.82	0.00
Female	0.07	0.04	1.91	0.06
Income	0.05	0.04	1.28	0.20
Lifestage				
Employed	0.12	0.08	1.41	0.16
Retired	0.05	0.08	0.65	0.52
Unemployed	0.04	0.07	0.58	0.56
Education				
Secondary	0.11	0.06	1.83	0.07
Further	0.22	0.05	4.10	0.00
Higher	0.22	0.07	3.21	0.00
Privacy concerns	0.08	0.04	2.32	0.02
Positive technology attitude	0.13	0.05	2.43	0.02
Concern about bad experiences	0.00	0.04	-0.07	0.95
Confidence in technical ability	0.07	0.04	1.51	0.13
Amount of use is dependent				
Age	-0.25	0.05	-4.64	0.00
Female	0.02	0.03	0.53	0.60
Income	0.12	0.04	3.04	0.00
Lifestage				
Employed	-0.09	0.07	-1.26	0.21
Retired	-0.04	0.07	-0.57	0.57
Unemployed	-0.10	0.06	-1.75	0.08
Education				
Secondary	0.16	0.04	4.10	0.00
Further	0.11	0.03	3.43	0.00
Higher	0.18	0.04	4.32	0.00
Privacy concerns	-0.00	0.03	-0.08	0.94
Positive technology attitude	0.08	0.04	1.89	0.06
Concern about bad experiences	0.08	0.03	2.45	0.02
Confidence in technical ability	0.34	0.03	9.80	0.00
Constant	1.05	0.31	3.37	0.00

N = 1,266 Internet users

Omitted categories: students; no educational qualification;

Benefits: Measurement of latent variable

	Standardized Path Coefficient	Robust standard error	t	p-value
Found event	0.74	0.03	23.15	0.00
Saved money	0.59	0.04	16.90	0.00
Health information	0.55	0.04	15.52	0.00

Notes: Composite reliability: 0.66; Average variance extracted: 0.40

Appendix D. Structural model of harms

	Standardized Path Coefficient	Robust standard error	t	p-value
Harm is dependent				
Amount of use	0.43	0.06	7.86	0.00
Age	0.12	0.05	2.37	0.01
Female	-0.05	0.04	-1.37	0.17
Income	-0.06	0.04	-1.78	0.08
Lifestage				
Employed	-0.01	0.10	-0.09	0.93
Retired	-0.03	0.09	-0.34	0.73
Unemployed	0.07	0.09	0.87	0.39
Education				
Secondary	0.06	0.04	1.67	0.10
Further	0.07	0.04	1.80	0.07
Higher	0.24	0.05	4.73	0.00
Privacy concerns	0.08	0.04	2.29	0.02
Positive technology attitude	-0.02	0.04	-0.57	0.57
Concern about bad experiences	0.16	0.04	3.94	0.00
Confidence in technical ability	0.03	0.04	0.68	0.50
Amount of use is dependent				
Age	-0.25	0.06	-4.56	0.00
Female	0.02	0.03	0.61	0.54
Income	0.11	0.04	2.97	0.00
Lifestage				
Employed	-0.09	0.08	-1.14	0.26
Retired	-0.03	0.07	-0.48	0.63
Unemployed	-0.10	0.06	-1.68	0.09
Education				
Secondary	0.17	0.04	4.39	0.00
Further	0.12	0.03	3.53	0.00
Higher	0.19	0.04	4.57	0.00
Privacy concerns	0.00	0.03	0.03	0.97
Positive technology attitude	0.08	0.04	1.88	0.06
Concern about bad experiences	0.08	0.03	2.48	0.01
Confidence in technical ability	0.34	0.04	9.78	0.00
Constant	1.00	0.32	3.17	0.00

N = 1,257 Internet users

Omitted categories: students; no educational qualification;

Harm: Measurement of latent variable

	Standardized Path Coefficient	Robust standard error	t	p-value
Bank	0.57	0.04	12.65	0.00
Misrep.	0.53	0.05	11.08	0.00
Porn	0.65	0.04	15.17	0.00
Virus	0.58	0.03	17.92	0.00
Spam	0.52	0.05	10.97	0.00
Stolen	0.42	0.06	7.14	0.00

Notes: Composite reliability: 0.72; Average variance extracted: 0.30