

Digital Literacy and Online Political Behavior

ONLINE APPENDIX

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1 Survey Questions

Internet Skills Scale (adapted from Hargittai 2009)

How familiar are you with the following computer and Internet-related items? Please choose a number between 1 and 5 where 1 represents “no understanding” and 5 represents “full understanding” of the item.

- Phishing
- Preference Setting
- App
- Hashtag
- Social Media
- Status Update
- Spyware
- Selfie
- Wiki
- Advanced Search

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- PDF

Next screen:

- Tagging
- Tablet
- Smartphone
- JPG
- Malware
- Cache
- BCC (on email)
- RSS
- Proxypod
- Fitibly

(last two items are intentionally made up)

Power User Scale (adapted from Sundar and Marathe 2010)

Please indicate your agreement with the following statements on a scale of -4 = Strongly Disagree to 4 = Strongly Agree.

- I think most technological gadgets are complicated to use.
- I make good use of most of the features available in any technological device.
- I have to have the latest available upgrades of the technological devices that I use.
- Use of information technology has almost replaced my use of paper.
- I love exploring all the features that any technological gadget has to offer.
- I often find myself using many technological devices simultaneously.

Next screen:

- I prefer to ask friends how to use any new technological gadget instead of trying to figure it out myself.
- Using any technological device comes easy to me.
- I feel like information technology is a part of my daily life.
- Using information technology gives me greater control over my work environment.
- Using information technology makes it easier to do my work.
- I would feel lost without information technology.

Low End Scale

Please indicate how often these statements apply to you. [Never / Almost never / Occasionally / Somewhat often / Very often]

- I rely on family members to introduce me to new technology.
- I have professionals (such as the Geek Squad) or family members take a look at my computer when something isn't working.
- A lot of the things I see online confuse me.
- I have problems with viruses and malware on my computer.
- I have trouble finding things that I've saved on my computer.

2 Analysis of Over- and Under-confidence

While we primarily focus on the relationship between the various measures of digital literacy and information retrieval across our samples, these data suggest an additional descriptive exercise that could lead to fruitful further investigation. For what kind of subjects do we see the tightest convergence between the self-reported digital literacy scales and their actual performance in the information retrieval task?¹

Tables 1 and 2 present the results of two regressions that aim to predict which subject attributes predict their “under- or over-confidence.” We operationalize underconfidence by defining subjects who score below the 25th percentile in a given digital literacy scale but successfully retrieved all three answers; overconfidence, by defining subjects above the 75th percentile who retrieved fewer than two of the three answers.

Table 1 does this for the Power User scale. Here, we see consistent evidence that older subjects are both more likely to be underconfident and less likely to be overconfident — in other words, there are fewer older people who ranked themselves highly on the Power User scale who then failed to retrieve information successfully. (Alternatively, as shown in column 2, we can say that younger subjects are more likely to be overconfident.) The only other significant predictor of underconfidence is the sample by which subjects were recruited: the subjects in the Facebook sample were more likely to be underconfident than subjects in the other three samples (although this difference is only significant in the Facebook-MTurk comparison, the point estimate is similar across the other, much smaller, samples). In contrast, the samples do not predict overconfidence.

Table 2 replicates this analysis for the Internet Skills measure. Here, neither age nor sample predicts anything; the one significant result is that more educated people are more likely to be overconfident.

Taken together, these results help us better understand the way that the different scales operate. The overconfidence in Table 2, for example, is predicted by more educated people reporting higher levels of familiarity with the terms in the Internet Skills battery, while the underconfidence in Table 1 is predicted by older people reporting lower levels of general technological capacity. This analysis provides motivation to better characterize the theoretical questions that are best answered with one scale rather than another.

This discussion is complicated by the role played by subject *motivation*. Our information retrieval task requires both motivation and capacity to complete, but we are primarily interested in capacity. It is possible that motivation varies by sample, and we find suggestive evidence that this is the case, but only in terms of predicting underconfidence with the Power User scale. That is, the significant increase in underconfidence going from the MTurk sample to

¹We thank a reviewer for suggesting these analyses.

the Facebook sample could have been produced if the relationship between stated capacity and actual capacity were the same across the two samples, but that subjects recruited from Facebook had lower motivation to carry out the task than subjects from MTurk. This is broadly plausible. However, the magnitude of this effect is not large, and we only detect it in one of four possible combinations of measures. Future research could further tease apart this difference by randomly offering a financial incentive for correctly retrieving the information; see the recent summary of this work in Luca et al. (2021).

Table 1: Correlates of Under- and Over-Confidence: Power User

	<i>Dependent variable:</i>	
	Under	Over
	(1)	(2)
Age	0.002*** (0.001)	-0.001** (0.0004)
White	0.002 (0.020)	-0.001 (0.014)
Male	-0.024 (0.018)	-0.022* (0.013)
Education	0.023** (0.009)	-0.005 (0.007)
Sample: High	-0.052 (0.036)	-0.029 (0.026)
Sample: Low	-0.034 (0.092)	0.075 (0.066)
Sample: MTurk	-0.026 (0.019)	-0.008 (0.014)
Constant	-0.066 (0.044)	0.114*** (0.031)
Observations	1,028	1,028
R ²	0.034	0.011
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Table 2: Correlates of Under- and Over-Confidence: Internet Skills

	<i>Dependent variable:</i>	
	Under (1)	Over (2)
Age	0.001 (0.001)	0.0002 (0.0003)
White	0.006 (0.018)	-0.002 (0.010)
Male	-0.017 (0.017)	0.005 (0.009)
Education	-0.005 (0.008)	0.014*** (0.005)
Sample: High	-0.050 (0.033)	-0.013 (0.018)
Sample: Low	0.033 (0.084)	-0.029 (0.046)
Sample: MTurk	-0.009 (0.017)	0.004 (0.009)
Constant	0.074* (0.040)	-0.042* (0.022)
Observations	1,028	1,028
R ²	0.008	0.011
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

References

- Luca, Mario, Kevin Munger, Jonathan Nagler, and Joshua A Tucker. 2021. “You Won’t Believe Our Results! But They Might: Heterogeneity in Beliefs About the Accuracy of Online Media.” *Journal of Experimental Political Science* pp. 1–11.
- Sundar, S Shyam, and Sampada S Marathe. 2010. “Personalization versus customization: The importance of agency, privacy, and power usage.” *Human Communication Research* .