

Opinions on Weblinks

Introduction

We report the flow and exact wording of the survey instrument used in a URL reading experiment designed to systematically evaluate web users ability to read URLs and recognise their safety perception of different structures. The survey was implemented using Limesurvey and conducted in April 2017. On the other hand, the survey rational, design process and results are reported in [1].

The survey consists of four main parts with the flow illustrated in Figure 1:

1. Consent
2. Instruction and Comprehension Question
3. URL Reading Trials
4. Demographics and Post-Survey Questions

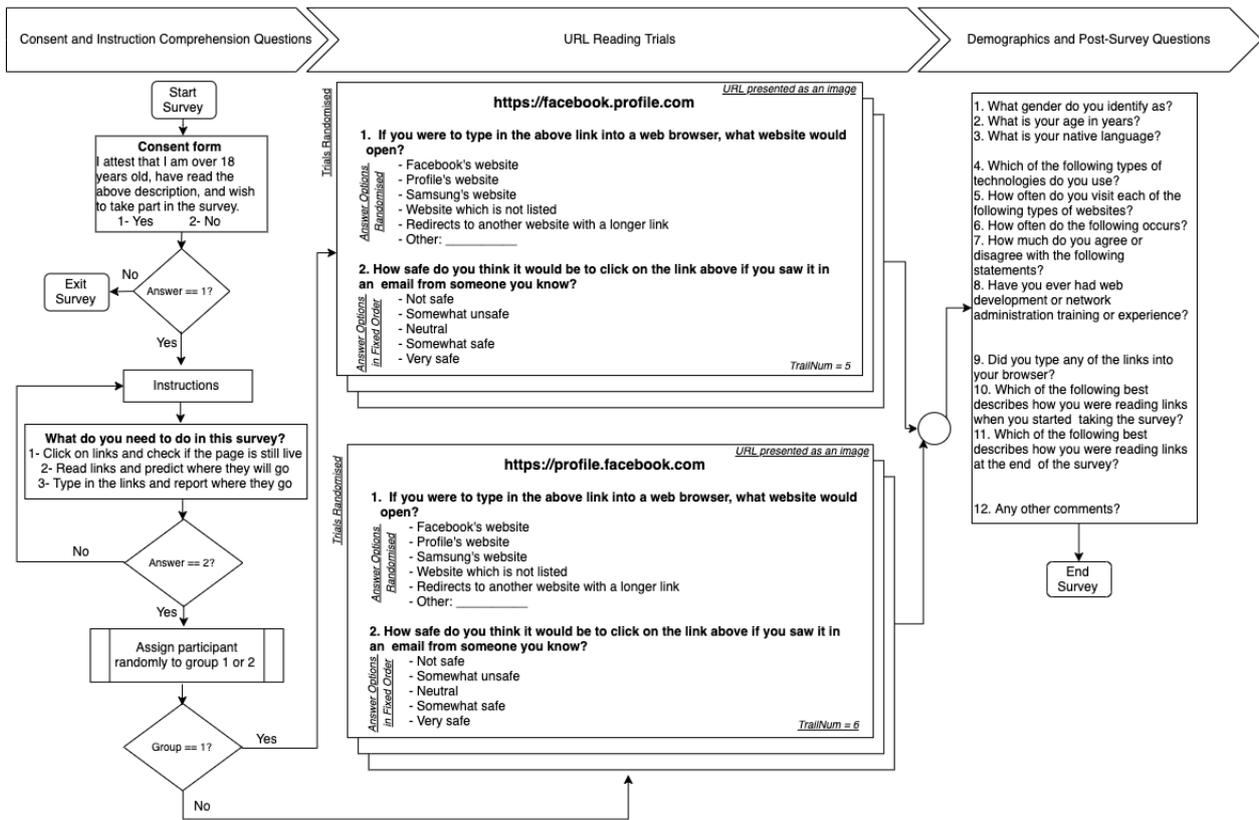


Figure 1 – Illustrating the survey flow and the URL block template. See the full text of the instructions in section 2, and the demographics and post-survey questions in section 4. All URL Trials are presented in section 3

The following pages depict how the survey was presented to participants verbatim with the following caveats:

- Section and subsection titles were not shown to participants and are there only for logical signposting.
- Subsubsection titles containing URLs were shown to participants as an image, so they could not be copied easily. The subsubsection number was obviously not shown to participants.
- Anything marked *Note:* or in *italics* is commentary on survey logic and was not shown to participants except for Q83-Q85 in the post-survey questions section 4; where we inform participants that their answers to those questions will not affect their payment in any way.

1 Consent Statement

The following survey will ask you to read **23 (URLs)** and state where you think each link would go if you were to visit it. The survey should take less than **15 minutes** to complete. The research is being conducted to better understand how people read and understand links.

Participating in the survey is voluntary, you may choose to leave the survey at any time. Questions marked with a * are not optional and must be filled in to progress. Answers and any free text you provide may be used in research publications. The research is being conducted by the University of Edinburgh and conforms to ethical standards. **Please contact Dr Kami Vaniea (kvaniea@inf.ed.ac.uk) if you have any questions or concerns.**

1. I attest that I am over 18 years old, have read the above description, and wish to take part in the survey.

- Yes, take me to the survey.
- No, do not continue with the survey.

Note: When a participant chooses “Yes, take me to the survey”, they are directed to the instructions section. Otherwise, they exit the survey.

2 Instructions

The links (URLs) in this survey are fictitious, they are designed to help us understand how people read links and predict where they will go before clicking. **Do not type in any of the presented links.** For all following questions, please read the link and state where you think the link would lead if you were to type it into a browser. We are interested in your predictions, not where the links actually lead, so please do not type the links in.

2. What do you need to do in this survey?

- Type in the links and report where they go
- Read links and predict where they will go
- Click on links and check if the page is still live

Note: Once a participant chooses “Read links and predict where they will go”, they are directed to the URL Reading Trials. Otherwise, they are directed to re-read the instructions and answer the question again.

3 URL Reading Trials (Varied by participant group)

Questions were shown in blocks with three elements: 1) the URL shown as an image, 2) a multiple choice question about the URL destination, and 3) a multiple choice question about the URL safety. See the paper for a detailed description of the question design and reasoning [1]. The destination prediction question answers were shown in a randomized order and include two parts of the URL (typically the subdomain and domain), a distractor answer (i.e. Google), “redirects to another website with a longer link”, “a website which is not listed”, and an “other” option where the participant could provide a free-text response. In cases where a second part of the URL did not exist (i.e. microsoft.com) a second distractor answer was used instead. The answer options in question 2 were a 5-likert scale identical for all URLs and presented in a fixed order.

The content is automatically customised based on two factors:

- **The recruitment platform of the participant (Amazon Mechanical Turk (AMT) or Prolific Academic (PA))** determines which one of the two following URLs are included in the survey: <https://mturk.com> or <https://prolific.ac>.
- **The participant group number (Group 1 or Group 2); which is randomly assigned once the consent form is signed.** The group number determines which set of the 12-single subdomain URLs are included in the survey.

For readability, we present the URL trials in their logical order, but in the real survey the URL trials were presented in a random order as illustrated in the flow diagram in Figure 1.

3.1 Domain URLs (All Participants)

3.1.1 <https://google.com>

3. *If you were to type in the above link into a web browser, what website would open?

- Mobile’s website
- Facebook’s website
- Samsung’s website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

4. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.1.2 <https://microsoft.com>

5. *If you were to type in the above link into a web browser, what website would open?

- Twitter’s website
- Facebook’s website
- BBC’s website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

6. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.2 Domain URLs (Prolific Academic participants Only)

3.2.1 <https://prolific.ac>

7. *If you were to type in the above link into a web browser, what website would open?

- Facebook's website
- Twitter's website
- Prolific's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

8. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.3 Domain URLs (Amazon Mechanical Turk participants only)

3.3.1 <https://mturk.com>

9. *If you were to type in the above link into a web browser, what website would open?

- Facebook's website
- Twitter's website
- Amazon Mechanical Turk's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

10. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4 Single Subdomain URLs (Group-1 Participants Only)

3.4.1 <https://facebook.profile.com>

11. *If you were to type in the above link into a web browser, what website would open?

- Facebook's website
- Profile's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

12. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.2 <https://mobile.twitter.com>

13. *If you were to type in the above link into a web browser, what website would open?

- Mobile's website
- Twitter's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

14. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.3 <https://profile.travelbuddy.com>

15. *If you were to type in the above link into a web browser, what website would open?

- Profile's website
- TravBuddy's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

16. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.4 <https://weheartit.mobile.com>

17. *If you were to type in the above link into a web browser, what website would open?

- We Heart It's website
- Mobile's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

18. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.5 <https://bbc.profile.com>

19. *If you were to type in the above link into a web browser, what website would open?

- BBC's website
- Profile's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

20. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.6 <https://mobile.cnn.com>

21. *If you were to type in the above link into a web browser, what website would open?

- Mobile's website
- CNN's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

22. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.7 <https://profile.dunfermlinypress.com>

23. *If you were to type in the above link into a web browser, what website would open?

- Profile's website
- Dunfermline Press's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

24. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.8 <https://haysfreepress.mobile.com>

25. *If you were to type in the above link into a web browser, what website would open?

- Hays Free Press's website
- Facebook's website
- Apple's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

26. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.9 <https://paypal.profile.com>

27. *If you were to type in the above link into a web browser, what website would open?

- Paypal's website
- Profile's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

28. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.10 <https://mobile.westernunion.com>

29. *If you were to type in the above link into a web browser, what website would open?

- Mobile's website
- Western Union's website
- Apple's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

30. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.11 <https://profile.purepoint.com>

31. *If you were to type in the above link into a web browser, what website would open?

- Profile's website
- Pure Point's website
- Apple's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

32. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.4.12 <https://revolut.mobile.com>

33. *If you were to type in the above link into a web browser, what website would open?

- Revolut's website
- Mobile's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

34. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5 Single Subdomain URLs (Group-2 Participants Only)

3.5.1 <https://profile.facebook.com>

35. *If you were to type in the above link into a web browser, what website would open?

- Profile's website
- Facebook's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

36. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.2 <https://twitter.mobile.com>

37. *If you were to type in the above link into a web browser, what website would open?

- Twitter's website
- Mobile's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

38. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.3 <https://travbuddy.profile.com>

39. *If you were to type in the above link into a web browser, what website would open?

- TravBuddy's website
- Profile's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

40. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.4 <https://mobile.weheartit.com>

41. *If you were to type in the above link into a web browser, what website would open?

- Mobile's website
- We Heart It's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

42. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.5 <https://profile.bbc.com>

43. *If you were to type in the above link into a web browser, what website would open?

- Profile's website
- BBC's website
- Apple's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

44. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.6 <https://cnn.mobile.com>

45. *If you were to type in the above link into a web browser, what website would open?

- CNN's website
- Mobile's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

46. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.7 <https://dunferlinepress.profile.com>

47. *If you were to type in the above link into a web browser, what website would open?

- Dunfermline Press's website
- Profile's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

48. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.8 <https://mobile.haysfreepress.com>

49. *If you were to type in the above link into a web browser, what website would open?

- Mobile's website
- Hays Free Press's website
- Apple's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

50. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.9 <https://profile.paypal.com>

51. *If you were to type in the above link into a web browser, what website would open?

- Profile's website
- Paypal's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

52. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.10 <https://westernunion.mobile.com>

53. *If you were to type in the above link into a web browser, what website would open?

- Western Union's website
- Mobile's website
- Samsung's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

54. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.11 <https://purepoint.profile.com>

55. *If you were to type in the above link into a web browser, what website would open?

- Pure Point's website
- Profile's website
- Google's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

56. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.12 <https://mobile.revolut.com>

57. *If you were to type in the above link into a web browser, what website would open?

- Mobile's website
- Revolut's website
- Apple's website
- A website which is not listed
- Redirects to another website with a longer link
- Other:_____

58. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

Short URLs (All Participants)

3.5.13 <https://bit.ly/1bdDIXc>

59. *If you were to type in the above link into a web browser, what website would open?

- Bit's website
- Ly's website
- 1bdDIXc's website
- Google's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

60. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.14 <https://goo.gl/fJOIAv>

61. *If you were to type in the above link into a web browser, what website would open?

- Goo's website
- Gl's website
- FJOIAv's website
- Microsoft's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

62. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.15 <https://po.st/If6RgX>

63. *If you were to type in the above link into a web browser, what website would open?

- Po's website
- St's website
- If6RgX's website
- Google's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

64. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.16 <https://u.to/SbwC>

65. *If you were to type in the above link into a web browser, what website would open?

- U's website
- To's website
- SbwC's website
- Google's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

66. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

Complex URLs (All Participants)

3.5.17 <https://facebook.com@google.com>

67. *If you were to type in the above link into a web browser, what website would open?

- Facebook's website
- Google's website
- Apple's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

68. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.18 <https://twitter.com/facebook.com>

69. *If you were to type in the above link into a web browser, what website would open?

- Twitter's website
- Facebook's website
- Google's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

70. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.19 <https://facebook.com/picture.html?a=twitter.com>

71. *If you were to type in the above link into a web browser, what website would open?

- Facebook's website
- Twitter's website
- Microsoft's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

72. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

3.5.20 <https://facebook.com/?url=twitter>

73. *If you were to type in the above link into a web browser, what website would open?

- Facebook's website
- Twitter's website
- Apple's website
- Redirects to another website with a longer link
- A website which is not listed
- Other:_____

74. *How safe do you think it would be to click on the link above if you saw it in an email from someone you know?

- Not safe
- Somewhat unsafe
- Neutral
- Somewhat safe
- Very safe

4 Demographics and Post-Survey Questions

75. *What gender do you identify as?

- Male
 Female
 Prefer not to say
 Other: _____

76. *What is your age in years? _____

77. *What is your native language?

- Afrikaans
 Albanian
 :
 :
 Welsh
 Xhosa

Note: A drop-down list of 73 languages ordered alphabetically

Full list: Afrikaans, Albanian, Amharic, Arabic, Armenian, Basque, Bengali, Bulgarian, Catalan, Cambodian, Croatian, Czech, Danish, Dutch, English, Estonian, Fiji, Finnish, French, Filipino, Georgian, German, Greek, Gujarati, Hebrew, Hindi, Hungarian, Icelandic, Indonesian, Irish, Italian, Japanese, Javanese, Korean, Latin, Latvian, Lithuanian, Macedonian, Malay, Malayalam, Maltese, Maori, Marathi, Mongolian, Nepali, Norwegian, Persian, Polish, Portuguese, Punjabi, Quechua, Romanian, Russian, Samoan, Serbian, Slovak, Slovenian, Spanish, Swahili, Swedish, Tamil, Tatar, Telugu, Thai, Tibetan, Tonga, Turkish, Ukrainian, Urdu, Uzbek, Vietnamese, Welsh, Xhosa

78. *Which of the following types of technologies do you use?

	Daily	Weekly	Monthly	Rarely	Do not use
Smartphone	<input type="radio"/>				
Tablet	<input type="radio"/>				
Laptop	<input type="radio"/>				
Desktop	<input type="radio"/>				

79. *How often do you visit each of the following types of websites?

	Daily	Weekly	Monthly	Rarely	Do not use
Social media (Twitter, Facebook, ect.)	<input type="radio"/>				
Banking/Financial websites	<input type="radio"/>				
Online games	<input type="radio"/>				
News websites	<input type="radio"/>				
Company websites	<input type="radio"/>				

80. *How often do the following occurs?

	Always	Often	Sometimes	Rarely	Never
I ask other people for help with computers	<input type="radio"/>				
Other people ask me for help with computers	<input type="radio"/>				

Note: The above two questions were adapted from [3].

81. *How much do you agree or disagree with the following statements?					
	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Consumers have lost all control over how personal information is collected and used by companies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most businesses handle the personal information they collect about consumers in a proper and confidential way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Existing laws and organizational practices provide a reasonable level of protection for consumer privacy today.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note: The above three questions were taken from section 2.6 of [2].

82. *Have you ever had web development or network administration training or experience?

Yes

No

83. *Did you type any of the links into your browser? (Your answer to this question will not effect your payment in any way.)

Yes, I did and it influenced most of my answers

Yes, I did and it influenced some of my answers

Yes, I did but it didn't influence any of my answers

No, I didn't but I really wanted to do so

No, I didn't and never though about doing it

Note: Your answer to this question will not affect your payment in any way.

84. *Which of the following best describes how you were reading links when you started taking the survey.

I picked a random answer

I was looking for the word that comes first right after https://

I was looking for the word that comes right before .com

I was looking for a familiar organization name somewhere in the link

Other: _____

Note: Your answer to this question will not affect your payment in any way.

85. *Which of the following best describes how you were reading links at the end of the survey

I picked a random answer

I was looking for the word that comes first right after https://

I was looking for the word that comes right before .com

I was looking for a familiar organization name somewhere in the link

Other: _____

Note: Your answer to this question will not affect your payment in any way.

86. Any other comments? _____

References

- [1] Sara Albakry, Kami Vaniea, and Maria Wolters. What is this URL's Destination: Empirical Evaluation of Web Users' URL Reading. In *Proceedings of the SIGCHI conference on Human Factors in computing systems*. ACM, 2020.
- [2] Ponnurangam Kumaraguru and Lorrie Faith Cranor. Privacy indexes: A survey of Westin's studies. Technical report, Carnegie Mellon University, 2005.
- [3] Prashanth Rajivan, Pablo Moriano, Timothy Kelley, and Linda Jean Camp. What can Johnny do?—factors in an end-user expertise instrument. In *HAIISA*, pages 199–208, 2016.