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The spread of misinformation: A multivariate analysis of the relationship between individual characteristics and fact-checking behaviours of Canadians

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The spread of misinformation: A multivariate analysis of the relationship between individual characteristics and fact-checking behaviours of Canadians

by **Howard Bilodeau** and **Aisha Khalid**

Abstract

- In 2023, over two in five Canadians (43%) thought it was becoming harder to distinguish between true and false news or information, compared with three years prior. This follows the finding that, in 2022, almost three-quarters of Canadians (73%) reported having seen content online that they suspected to be false or inaccurate in the past 12 months.
- In this paper, multivariate analyses were conducted to examine the role of demographic and socioeconomic characteristics in the likelihood of fact-checking news or information and sharing unverified online information, behaviours thought to be associated with the spread of misinformation.
- Age and education level emerge as factors that are likely to be important in the spread of misinformation. Increasing age was associated with a lower probability of fact-checking information. It was also associated with a lower probability of sharing unverified online information. Conversely, higher education was associated with a higher likelihood of engaging in both behaviours.
- The results of this paper demonstrate the complexity surrounding the decisions to fact-check information. Because the surveys used in this analysis did not directly assess the ability of respondents to identify misinformation, further research is required to determine how fact-checking behaviours relate to the spread of misinformation.

Introduction

As technology evolves, there are more ways than ever to access news and information. While Canadians continue to use more traditional information sources, such as news websites, television, and radio, social media platforms (e.g., Facebook, Instagram, TikTok, YouTube) are becoming increasingly common sources of information. A recently released wave of Statistics Canada's Survey Series on People and their Communities (SSPC) found that over two in five Canadians (44%) typically[1] got their news or information in 2023 from social media accounts unaffiliated with government, scientific or news organizations. The percentage of Canadians typically using social media as an information source was larger than the proportion of those typically turning to federal government sources (33%), provincial or municipal government sources (33%), and scientific experts or peer-reviewed journals (26%). Meanwhile, Canadians were more likely to typically get information from news organizations (76%) and close contacts (53%).

Although the Internet has made it easier than ever to get information, it has also created new opportunities for misinformation to spread. Over two in five Canadians (43%) reported on the SSPC that it was becoming harder to distinguish between true and false news or information in 2023, compared with three years prior. This follows the finding from Statistics Canada's 2022 Canadian Internet Use Survey (CIUS) that almost three-quarters of Canadians (73%) had seen content online that they suspected to be false or inaccurate in the past 12 months.

Foreign states and ideologically motivated individuals and groups are increasingly leveraging new and evolving technologies like artificial intelligence and social media algorithms to spread misinformation.[2] Misinformation can make it difficult for individuals to make informed decisions in areas such as health, finances and politics, and can pose a threat to democracy.[3] On the SSPC, 59% of Canadians reported that they were very or extremely concerned about online misinformation[4] in 2023.

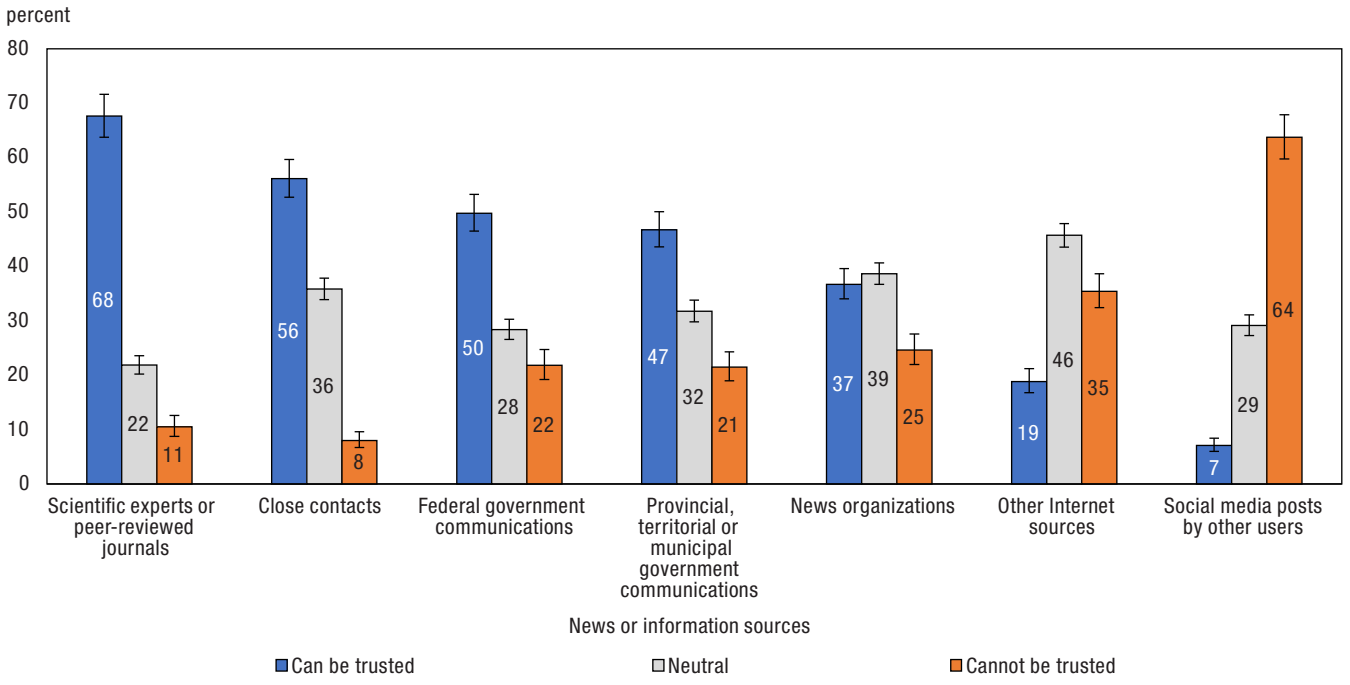
1. Respondents were asked to identify sources they typically get news or information from. The word "typically" was not defined.
2. See the Government of Canada's web page on learning about disinformation.
3. See the Government of Canada's campaign against online disinformation.
4. In the SSPC, misinformation was defined as "news or information that is verifiably false or inaccurate. The sharer of misinformation may or may not be aware that it is misinformation. When they are aware, it is often referred to as disinformation."

This paper elaborates on insights from the SSPC and the CIUS by conducting multivariate analyses to further examine the role of demographic and socioeconomic characteristics on self-reported behaviours thought to be associated with the spread of misinformation. The first section of this paper provides a general overview of the levels of trust Canadians have in various information sources. The second section uses data from the SSPC to examine how individual characteristics affect the likelihood of individuals verifying the accuracy of information. The third uses data from the CIUS to look at how individual characteristics affect the likelihood of sharing unverified online information. Finally, the "Analysis" section examines the results of all the multivariate analyses by focusing on the explanatory variables common to both surveys.

Trust in news or information sources

While many Canadians now use social media as a source of news or information, it is still among their least trusted information sources. The SSPC found that, in 2023, almost two-thirds of Canadians (64%) reported low levels of trust in social media posts by accounts unaffiliated with government, scientific or news organizations as sources of information.[5] Conversely, the sources Canadians most commonly reported trusting were scientific experts or peer-reviewed journals (68%), close contacts (56%) and the federal government (50%). Chart 1 presents the reported levels of trust for all news or information sources covered in the SSPC.

Chart 1
Level of trust in various news or information sources, 2023



Notes: The trust question on the Survey Series on People and their Communities used a scale from "cannot be trusted at all" (1) to "can be trusted completely" (5). For this chart, responses were reclassified as follows: 1 to 2 = cannot be trusted, 3 = neutral, and 4 to 5 = can be trusted. Error bars represent the 95% confidence intervals.
Source: Statistics Canada, Survey Series on People and their Communities, wave 3, 2023.

Having low levels of trust towards certain news or information sources may be related to the prevalence of misinformation online. The 2022 CIUS found that just over one-quarter of Canadians (27%) saw content online that they suspected to be false or inaccurate every day. However, it is important to note that individuals are not always able to accurately identify misinformation, even when they fact-check. When fact-checking information, individuals can fall victim to confirmation bias, which is the tendency of a person to seek and assign greater importance to information that supports their existing beliefs.

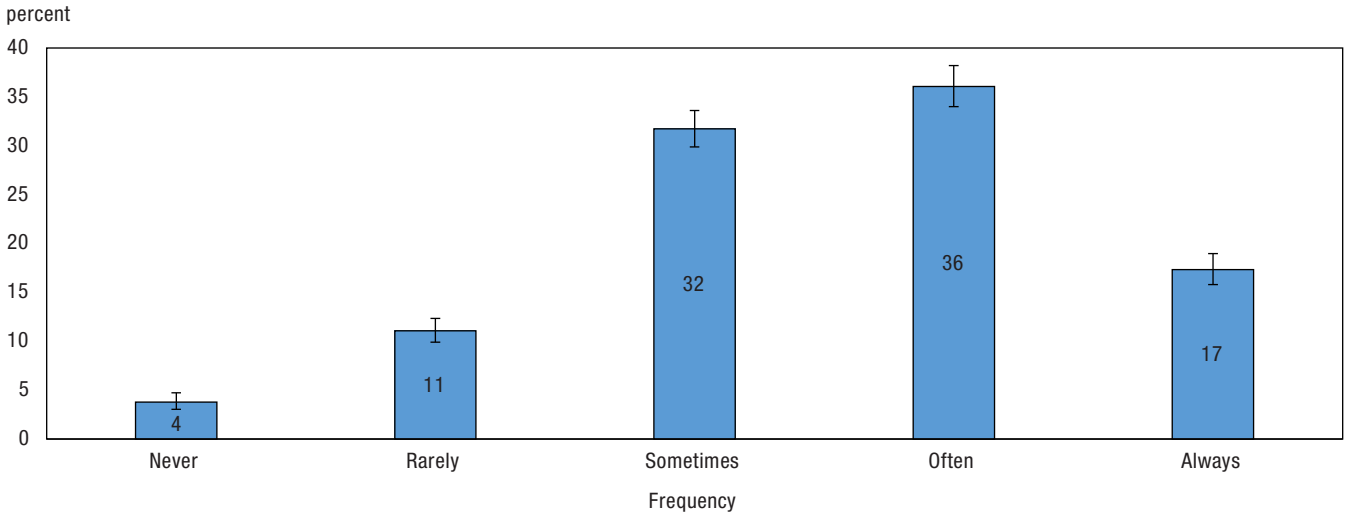
5. Trust in social media posts by government, scientific and news organizations was not directly measured in the SSPC. Social media posts by these types of organizations were included in the broader categories for the organizations.

As an example of the difficulty in accurately spotting misinformation, the Survey of Online Harms in Canada, conducted in 2022 by the Dais at Toronto Metropolitan University, found that almost half of respondents (47%) were unable to correctly identify at least 75% of a series of misinformation statements they were presented with. Meanwhile, about one in six respondents (15%) could correctly identify 25% or fewer of the misinformation statements. This latter group was "less trusting of mainstream news, more likely to trust social media and use it for news, and less likely to fact-check."[6] Similarly, in the global Truth Quest Survey conducted by the Organisation for Economic Co-operation and Development (OECD) in 2024, respondents, on average, misidentified true and false content they were presented with 40% of the time. Additionally, more trust in social media as a news source was associated with a reduced ability to correctly identify content.[7]

Survey Series on People and their Communities regressions: Likelihood of fact-checking news or information

While the SSPC did not directly measure belief in misinformation, it did examine the likelihood of verifying the accuracy of news stories about current issues using at least one additional source. In 2023, over half of Canadians (53%) said they always or often fact-check news or information, while a minority (4%) reported never fact-checking it (see Chart 2).

Chart 2
Frequency of fact-checking news or information, 2023



Note: Error bars represent the 95% confidence intervals.
Source: Statistics Canada, Survey Series on People and their Communities, wave 3, 2023.

Among the more than four in five Canadians (83%) who do not always fact-check information, half (50%) reported a lack of interest or motivation as a reason for not doing so. To further investigate the factors associated with more verification of information, weighted ordinal logistic regression analyses were performed using data from the SSPC. Table 1 in the "Regression results" section at the end of the paper presents the explanatory variables analyzed and their definitions. Significant results are highlighted with asterisks, and results are presented as odds ratios.[8]

In the first specification, only demographic and socioeconomic characteristics were included as explanatory variables. The coefficients for age and education were found to be statistically significant. The likelihood of fact-

6. See Andrey (2023) for more information.
7. See Organisation for Economic Co-operation and Development (2024) for more information.
8. In the ordinal logistic regressions, for dummy variables (e.g., male), an odds ratio greater than one indicates that, holding all other variables constant, an individual with that characteristic has a higher probability of more frequently fact-checking news or information (SSPC regressions) or more frequently sharing information without fact-checking it (CIUS regressions), compared with those without that characteristic. For continuous and ordinal variables (e.g., age, education), an odds ratio greater than one indicates that, holding all other variables constant, a one-unit increase in that variable increases the probability of more frequently fact-checking news or information or more frequently sharing it without fact-checking it. For both types of variables, odds ratios less than one have the opposite meaning. In the body of the paper, the interpretation of odds ratios is shortened for ease of reading. For more information on interpreting odds ratios from ordinal logistic regressions, see the web pages on running ordinal logistic regressions in R and interpreting odds ratios in logistic regressions from the University of California, Los Angeles.

checking news or information was found to decrease as age increased, while those who had higher levels of education had a greater likelihood of doing so. Among racialized groups, the odds ratios for the Chinese, Filipino and Korean groups were significant and associated with a lower likelihood of fact-checking news or information.

To examine other factors associated with the likelihood of verifying news stories, a second specification, which also included mental health measures and variables related to news or information consumption, was conducted. In this specification, the coefficients for racialized groups were no longer significant. The coefficient for education remained significant, but its estimated effect was reduced, while the relationship between age and the likelihood of fact-checking news or information remained significant and of the same magnitude.

Misinformation is often designed to trigger an emotional response, motivating a person to quickly share the information without fact-checking it.[9] While the SSPC did not measure the current emotional state of respondents, it did include self-reported mental health measures. These measures were included in the second specification as proxies for the effect of the emotional response on fact-checking behaviours. Among the mental health variables examined, hopefulness and life satisfaction were statistically significant. A more hopeful view of the future was associated with a greater likelihood of fact-checking news or information, while greater life satisfaction was associated with a lower probability of doing so.[10]

In terms of the news or information consumption variables, having a greater concern about misinformation was statistically significantly associated with a higher probability of fact-checking. The coefficients for typically using federal, expert or other Internet information sources were also significant. For all these information sources, typical use was linked to a greater likelihood of fact-checking. Similarly, the coefficients for having trust in expert and other Internet sources were significant and associated with a higher probability of fact-checking. These findings may be the result of fact-checkers typically using expert and other Internet sources to verify information they encounter elsewhere. However, because the SSPC did not specifically ask individuals how they conducted their fact-checking, it is impossible to definitively determine the cause of these results.

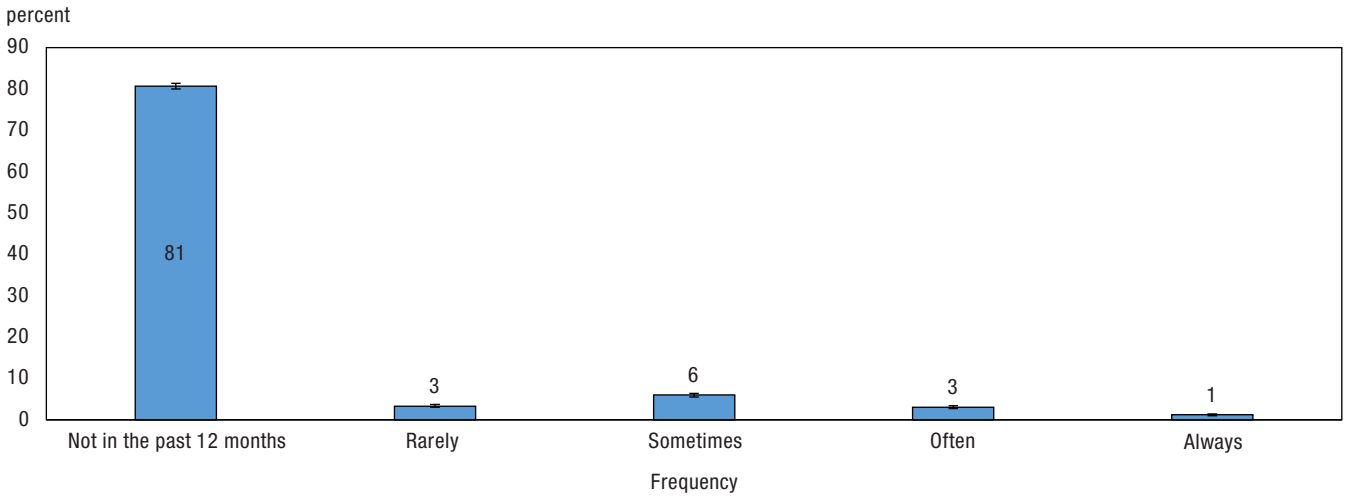
The coefficient for typical use of news organizations as an information source was also significant and positively associated with fact-checking behaviour. However, greater trust in news organizations was statistically significantly associated with a lower probability of fact-checking. These results are likely related to the relatively even distribution of Canadians who trust, distrust or have neutral feelings of trust towards news organizations (as was shown in Chart 1). In addition to news organizations, the estimate for trust in close contacts was also significant and associated with a lower probability of fact-checking news or information, demonstrating how social relationships can play an important role in how information spreads.

9. See the Government of Canada's campaign against online disinformation.
10. The positive association between hopefulness and fact-checking information in this paper differs from the descriptive findings presented in the previous article on wave 3 of the SSPC published in *The Daily*. In that article, greater hopefulness was associated with a lower likelihood of regularly fact-checking news or information. It is important to note that the present paper did not measure the same concept as the previous article; the present paper looked at all rates of fact-checking, while the previous article examined only individuals who regularly fact-check news or information. The present paper also controlled for more factors than the previous article.

Canadian Internet Use Survey regressions: Likelihood of sharing online news or information without fact-checking it

Misinformation is of most concern when it spreads unchecked. The 2022 CIUS found that almost one in seven Canadians (14%) had shared at least some online news or information without checking its accuracy in the past 12 months (see Chart 3).

Chart 3
Frequency of sharing online news or information without fact-checking it in the past 12 months, 2022



Notes: The chart categories do not sum to 100% because of rounding and the exclusion of Internet non-users (5% of Canadians). Error bars represent the 95% confidence intervals.
Source: Statistics Canada, Canadian Internet Use Survey, 2022.

To further examine the factors that predict the likelihood of sharing online information without fact-checking it, weighted ordinal logistic regressions were conducted using different combinations of explanatory variables from the CIUS (see Table 2 in the "Regression results" section). As in the previous section, odds ratios were used to interpret the results.

In the first specification, only demographic and socioeconomic characteristics were examined. The coefficient for age was found to be statistically significant, with increasing age resulting in a lower probability of sharing online information without fact-checking it. The estimates for family income and education were also significant, with higher values for both resulting in a higher probability of sharing information without fact-checking it. Among racialized groups, the coefficients for the Chinese and South Asian groups were significant. The Chinese group was associated with a higher likelihood of sharing unverified information, while the South Asian group was associated with a lower likelihood.

To examine other factors suspected of being related to fact-checking and sharing information, an additional specification was conducted that incorporated mental health variables, a variable for time spent online for general purposes[11] and a variable for having previously seen misinformation. When these variables were included in the regression, education was no longer a significant predictor of sharing information without fact-checking it. However, all other variables that were previously significant remained significant.

As with the SSPC regressions, self-reported mental health measures were included in the second specification as proxies for the effect of the emotional response on fact-checking and information-sharing behaviours. In this specification, it was found that better mental health statistically significantly decreased the likelihood of sharing

11. General Internet use includes, but is not limited to, browsing the web, using social media, communicating online, emailing, shopping online, accessing the news and banking online and excludes using the Internet for business or school, streaming video content, and using video gaming services.

unverified online information. However, unlike in the previous section, life satisfaction was not significant. Time spent online was found to also be significant, with spending more time online increasing the likelihood of sharing information without fact-checking it. The odds ratio for seen misinformation was also greater than one and significant.

Because the ability to identify misinformation has been previously shown to be related to education level in some cases,[12] a third specification was conducted. This specification included all the variables from the second specification, except for seen misinformation, to see how the correlation between that variable and education affected the results. In the third specification, the coefficient for education was once again significant, with an identical odds ratio to the first specification. This confirms that the lack of significance for the education variable in the second specification was connected to its relationship with seen misinformation.

Analysis

When the results of both surveys are examined, age and education level emerge as factors that are likely to be important in the spread of misinformation. The probability of fact-checking news or information was found to decrease with increasing age, but so too did the likelihood of sharing unverified online information. These findings may be related to the fact that older Canadians have shown a greater preference for non-Internet information sources, compared with other age groups.[13] It can be more challenging to fact-check and share information when less time is spent online. This idea is further supported by the finding in this paper that spending more time online was associated with a higher likelihood of sharing information without fact-checking it.

Those who were more educated had a higher probability of fact-checking news or information but were also more likely to share online information without fact-checking it. This latter finding may be the result of those who are more educated generally feeling more confident in their ability to correctly identify false or misleading information, as was shown in the OECD's Truth Quest Survey.[14] This is also supported by the fact that, in the CIUS regressions, the odds ratio for education was not statistically significant when controlling for having previously seen misinformation. However, it is important to note that neither the SSPC nor the CIUS measured the accuracy of people's ability to spot misinformation. Therefore, these surveys cannot determine whether confidence in identifying misinformation was warranted. The Truth Quest Survey explored this concept and found no relationship between confidence in spotting misinformation and the ability to do so.[15]

Mixed results were found regarding the relationship between mental health measures, fact-checking online information and sharing it without fact-checking it. Higher life satisfaction was associated with a lower probability of fact-checking, while no significant relationship between life satisfaction and sharing unverified information could be found. Conversely, greater hopefulness was associated with a higher probability of fact-checking, and better mental health was associated with a lower likelihood of sharing information without fact-checking it. These results may indicate that the emotional response to misinformation has a differing effect on the decisions to fact-check information and share it without fact-checking it. However, it is impossible to definitively determine the cause of these findings because the mental health measures examined in the SSPC and CIUS were different. Additionally, the mixed results may also have been because some of the examined mental health measures were inaccurate proxies for the emotional state of a person at the time they made the decision whether to fact-check news or information.

The SSPC and CIUS analyses also found some evidence that belonging to the Chinese group predicted a lower likelihood of fact-checking online information and a higher likelihood of sharing it without fact-checking it. However, the results for the likelihood of fact-checking information were not significant when controlling for mental health measures and variables related to news or information consumption. Researchers have previously noted that Chinese Americans often use social media apps that are distinct from those used by other groups.[16] Unique features and the cultural norms of users can lead to information spreading differently on different social media apps. This effect may also have contributed to the results observed in the SSPC and the CIUS.

12. See Arin et al. (2023) and Preston et al. (2021) for more information.
13. Results are from the 2023 Canadian Social Survey – Quality of Life, Virtual Health Care and Trust.
14. See Organisation for Economic Co-operation and Development (2024) for more information.
15. See Organisation for Economic Co-operation and Development (2024) for more information.
16. See Chong et al. (2022) for more information.

Conclusion and limitations

Overall, these results demonstrate the complexity surrounding the decisions to fact-check information and share unverified findings. One limitation of the SSPC and the CIUS is that they focused only on self-reported fact-checking behaviours. This could have led some respondents to report how they wanted to be perceived, rather than how they behaved. This effect may have been particularly relevant for the CIUS regressions, where the dependent variable was skewed towards not having shared online information without fact-checking it in the past 12 months (as was shown in Chart 3). The skewed distribution may have also been related to the tiered structure of the survey questions used to define the dependent variable (as described in the notes of Table 2).

Regarding the CIUS, it is also important to note that only online news or information were in scope. The spread of misinformation online is of growing importance, but the Internet is not the only medium through which misinformation can travel. Future surveys could take a broader lens and collect measures related to sharing information obtained offline.

Another important limitation is that both surveys looked only at fact-checking behaviours and did not directly measure the spread of misinformation. While sharing information without fact-checking it is assumed to increase the possibility of spreading misinformation, the degree to which this occurs cannot be definitively determined with these surveys. Moreover, while the SSPC did allow for the examination of the relationship between the use of particular information sources and the decision to fact-check, it did not ask Canadians which sources they used for fact-checking. Because of confirmation bias, the sources used for fact-checking are another important consideration in the spread of misinformation. This topic has already begun to be explored by other researchers, such as the *Information Overload* report produced by the Canadian Association of Science Centres in 2022 and 2023. According to this report, many respondents found the search for truth to be a complex and iterative process wherein knowledge is refined over time by considering many different factors and information sources.[17] Future surveys could further examine how Canadians fact-check information and investigate which fact-checking strategies improve their ability to identify misinformation.

Other articles based on wave 3 of the Survey Series on People and their Communities and the 2022 Canadian Internet Use Survey

Results for wave 3 of the SSPC were released on December 20, 2023, in an article titled "Concerns with misinformation online, 2023."

Results for the 2022 CIUS were released on July 20, 2023, in an article titled "Canadian Internet Use Survey, 2022."

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17. See Canadian Association of Science Centres (2023) for more information.

Regression results

Table 1
Ordinal logistic regressions using the dependent variable of frequency of fact-checking news or information

Explanatory variable	Variable definition	Specification 1: Demographic and socioeconomic variables only	Specification 2: Demographic, socioeconomic, mental health, and news or information consumption variables
		odds ratio	
Demographic and socioeconomic variables			
Age	Age (value)	0.99**	0.99**
Male[1]	Identifies as male (dummy variable)	1.16	1.09
Education[2]	Highest level of education (scale of 1 to 7)	1.17**	1.07**
Born outside Canada	Born outside Canada (dummy variable)	1.01	1.05
Personal income	After-tax personal income brackets (scale of 1 to 12)	1.00	0.99
Location	Individuals residing within a census metropolitan area or census agglomeration (dummy variable)	1.14	1.19
Racialized[3] and Indigenous[4] groups (dummy variables)			
Black	Classified as Black	0.89	0.95
Chinese	Classified as Chinese	0.72**	0.88
Filipino	Classified as Filipino	0.81*	1.01
Korean	Classified as Korean	0.70*	1.00
Japanese	Classified as Japanese	0.87	1.05
Latin American	Classified as Latin American	1.07	1.16
Southeast Asian	Classified as Southeast Asian	0.87	1.05
South Asian	Classified as South Asian	0.92	0.98
West Asian	Classified as West Asian	0.95	1.11
Other racialized groups	Classified as other or multiple racialized groups	0.89	0.83
Indigenous	Identifies as First Nations, Métis or Inuk (Inuit)	0.81	0.71
Mental health variables			
Mental health conditions	Having emotional, psychological or mental health conditions (dummy variable)	…	1.06
Loneliness	Frequency of feeling lonely (scale of 1 to 5)	…	0.93
Hopefulness	Frequency of having a hopeful view of the future (scale of 1 to 5)	…	1.17**
Worthwhileness	Extent of feeling the things done in life are worthwhile (scale of 0 to 10)	…	1.00
Life satisfaction	Level of life satisfaction (scale of 0 to 10)	…	0.91**
Family satisfaction	Level of satisfaction with personal relationships—Family (scale of 0 to 10)	…	0.99
Friend satisfaction	Level of satisfaction with personal relationships—Friends (scale of 0 to 10)	…	0.99
News or information consumption variables			
Misinformation concern	Level of concern about the presence of misinformation online (scale of 1 to 5)	…	1.41**
Difficulty distinguishing truth	Level of difficulty distinguishing between true and false news or information, compared with three years ago (scale of 1 to 3)	…	1.03

Table 1
Ordinal logistic regressions using the dependent variable of frequency of fact-checking news or information

Explanatory variable	Variable definition	Specification 1: Demographic and socioeconomic variables only	Specification 2: Demographic, socioeconomic, mental health, and news or information consumption variables
		odds ratio	
News or information sources (dummy variables)			
Close contacts	Typically gets news or information from close contacts	…	0.89
Federal	Typically gets news or information from federal government communications	…	1.39*
Provincial, territorial or municipal	Typically gets news or information from provincial, territorial or municipal government communications	…	1.14
Expert	Typically gets news or information from scientific experts or peer-reviewed journals	…	2.13**
News organization	Typically gets news or information from news organizations	…	1.28*
Social media	Typically gets news or information from social media posts by other users	…	0.97
Other Internet	Typically gets news or information from other Internet sources	…	1.34**
Trust in news or information sources (scale of 1 to 5)			
Close contacts	Trust in close contacts as a source of news or information	…	0.89*
Federal	Trust in federal government communications as a source of news or information	…	0.99
Provincial	Trust in provincial, territorial or municipal government communications as a source of news or information	…	0.94
Expert	Trust in scientific experts or peer-reviewed journals as a source of news or information	…	1.25**
News organization	Trust in news organizations as a source of news or information	…	0.75**
Social media	Trust in social media posts by other users as a source of news or information	…	1.01
Other Internet	Trust in other Internet sources as a source of news or information	…	1.13*

… not applicable

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

1. For consistency with previous articles on the SSPC, the regressions use a two-category gender variable. This variable distributes individuals who identified as "non-binary" in the male and female categories.

2. Respondents were asked to identify their highest level of education in the following ordered list: (1) less than a high school diploma or its equivalent; (2) high school diploma or high school equivalency certificate; (3) trades certificate or diploma; (4) college, CEGEP or other non-university certificate or diploma; (5) university certificate or diploma below the bachelor's level; (6) bachelor's degree; and (7) university certificate, diploma or degree above the bachelor's level.

3. Variables for racialized groups were derived from responses to a question asking which population groups a person belongs to. Racialized groups are population groups that are classified as visible minorities under the *Employment Equity Act*. The *Employment Equity Act* defines visible minorities as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour."

4. Indigenous group refers to whether a person is First Nations (North American Indian), Métis or Inuk (Inuit). A person may be included in more than one of these three specific groups. Aboriginal peoples of Canada (referred to in this paper as Indigenous) are defined in the *Constitution Act, 1982*. First Nations (North American Indian) includes Status and non-Status Indians. Indigenous respondents are not part of a racialized group.

Notes: The dependent variable in these regressions was the following survey question: "How often do you use at least one additional information source to verify the accuracy of news stories about current issues you encounter?" The response categories used a scale from never (1) to always (5). The reference categories for particular dummy variables are the inverse populations for those variables and are not shown in the table (e.g., non-racialized, non-Indigenous).

Source: Statistics Canada, Survey Series on People and their Communities, wave 3, 2023.

Table 2
Ordinal logistic regressions using the dependent variable of frequency of sharing online news or information without fact-checking it in the past 12 months

Explanatory variable	Variable definition	Specification 1: Demographic and socioeconomic variables only	Specification 2: Demographic, socioeconomic and other variables	Specification 3: Demographic, socioeconomic and other variables, excluding seen misinformation
		Odds ratio		
Demographic and socioeconomic variables				
Age	Age (value)	0.98**	0.99**	0.99**
Male[1]	Identifies as male (dummy variable)	0.92	0.89	0.92
Education[2]	Highest level of education (scale of 1 to 7)	1.05**	1.03	1.05**
Immigrant[3]	Landed immigrants admitted to Canada since 1952 (dummy variable)	0.92	0.96	0.94
Family income	Census family income decile (scale of 1 to 10)	1.02*	1.03*	1.03**
Location	Individuals residing within a census metropolitan area or census agglomeration (dummy variable)	1.15	1.10	1.10
Racialized[4] and Indigenous[5] groups (dummy variables)				
Black	Classified as Black	0.98	1.02	0.95
Chinese	Classified as Chinese	1.43**	1.47**	1.35*
Filipino	Classified as Filipino	0.86	0.92	0.86
Korean	Classified as Korean	0.89	1.01	0.86
Japanese	Classified as Japanese	0.88	1.00	0.94
Latin American	Classified as Latin American	0.89	0.96	0.91
Southeast Asian	Classified as Southeast Asian	1.20	1.26	1.13
South Asian	Classified as South Asian	0.64**	0.71*	0.64**
West Asian	Classified as West Asian	1.15	1.26	1.17
Other racialized groups	Classified as other or multiple racialized groups	0.91	0.93	0.88
Indigenous	Identifies as First Nations, Métis or Inuk (Inuit)	1.32	1.29	1.27

Table 2
Ordinal logistic regressions using the dependent variable of frequency of sharing online news or information without fact-checking it in the past 12 months

Explanatory variable	Variable definition	Specification 1: Demographic and socioeconomic variables only	Specification 2: Demographic, socioeconomic and other variables	Specification 3: Demographic, socioeconomic and other variables, excluding seen misinformation
			Odds ratio	
Other variables				
Time spent online	Time spent online per week on general Internet use[6] (scale of 1 to 4)	…	1.18**	1.24**
Seen misinformation	Frequency of seeing information suspected to be false or inaccurate in the past 12 months (scale of 1 to 5)	…	1.28**	…
Mental health	Perceived level of mental health (scale of 1 to 5)	…	0.87**	0.85**
Life satisfaction	Level of life satisfaction (scale of 0 to 10)	…	0.99	0.98

… not applicable

* significantly different from reference category ($p < 0.05$)

** significantly different from reference category ($p < 0.01$)

1. For consistency with previous articles on the CIUS, the regressions use a two-category gender variable. This variable distributes individuals who identified as "non-binary" in the male and female categories.

2. Respondents were asked to identify their highest level of education in the following ordered list: (1) less than a high school diploma or its equivalent; (2) high school diploma or high school equivalency certificate; (3) trades certificate or diploma; (4) college, CEGEP or other non-university certificate or diploma; (5) university certificate or diploma below the bachelor's level; (6) bachelor's degree; and (7) university certificate, diploma or degree above the bachelor's level.

3. Because of limitations in the level of detail available for immigrants in the CIUS, the immigrant reference category includes Canadian citizens and non-landed immigrants.

4. Variables for racialized groups were derived from responses to a question asking which population groups a person belongs to. Racialized groups are population groups that are classified as visible minorities under the *Employment Equity Act*. The *Employment Equity Act* defines visible minorities as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour."

5. Indigenous group refers to whether a person is First Nations (North American Indian), Métis or Inuk (Inuit). A person may be included in more than one of these three specific groups. Aboriginal peoples of Canada (referred to in this paper as Indigenous) are defined in the *Constitution Act, 1982*. First Nations (North American Indian) includes Status and non-Status Indians. Indigenous respondents are not part of a racialized group.

6. General Internet use includes, but is not limited to, browsing the web, using social media, communicating online, emailing, shopping online, accessing the news and banking online and excludes using the Internet for business or school, streaming video content, and using video gaming services.

Notes: The dependent variable in these regressions was constructed using the following survey questions: (1) "During the past 12 months, did you [confirm that a story is true by looking across multiple information sources] when reading or listening to news or information online?" and (2) "How often did you share it first without checking its accuracy?" The response categories used a scale from "not in the past 12 months" (1) to "always" (5).
The reference categories for particular dummy variables are the inverse populations for those variables and are not shown in the table (e.g., non-racialized, non-Indigenous).

Source: Statistics Canada, Canadian Internet Use Survey, 2022.

Methodology

This article uses data from the third wave of the Survey Series on People and their Communities (SSPC): Quality of Life, Source of Information and Trust and the 2022 iteration of the Canadian Internet Use Survey (CIUS). The SSPC is a panel survey, whereas every iteration of the CIUS has an independent sample. Both surveys have a target population of individuals aged 15 years and older living in the 10 provinces of Canada, excluding residents of Indigenous reserves.

Data for the CIUS were collected from December 2022 to April 2023. The sample size was approximately 55,700 individuals, and the response rate was 45.3%.

Wave 3 of the SSPC was collected in October 2023. The sample size of the SSPC was approximately 70,000 individuals, and the response rate for wave 3 was 14.4%.

All estimates presented in this paper were weighted to be representative of the target population.

In the regressions, the scales used for the following variables were inverted when compared with the questionnaire:

- SSPC: frequency of fact-checking news or information (dependent variable), hopefulness, loneliness and misinformation concern
- CIUS: frequency of sharing online news or information without fact-checking (dependent variable), seen misinformation and mental health

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