Catalogue no. 11-633-X — No. 043
ISSN 2371-3429
ISBN 978-0-660-44293-8

Analytical Studies: Methods and References

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Social Analysis and Modelling Division

Release date: August 9, 2022

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11–633-043
2022006
ISSN 2371–3429
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August 2022

Acknowledgements

The authors thank Rubab Arim, Tina Chui, Leila Golparvar, Amanda Halladay, Isabelle Marchant, René Morissette, Grant Schellenberg, Stacey Wan and Li Xue for their advice and comments on an earlier version of this article.

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Abstract

This article compares how survey mode, survey thematic context and sample design contribute to variation in responses to similar questions on self-perceived racial discrimination across the 2013, 2014, 2019 and 2020 cycles of the General Social Survey (GSS). Among individuals who were aged 15 to 74 years and designated as a visible minority, the shares who reported discrimination because of their race or colour in the previous five years were 31%, 13%, 22% and 38% in 2013, 2014, 2019 and 2020, respectively. The analysis shows that this variation across GSS cycles was primarily attributable to differences in survey mode and survey context.

Introduction

Discrimination is often measured by self-perceived experiences collected from household surveys.[1] Previous studies have shown a strong association between self-perceived discrimination and outcomes such as life satisfaction (Houle & Schellenberg, 2010; Safi, 2010; Vang et al., 2019), sense of belonging (Berry & Hou, 2017; Painter, 2013; Wu & Finnsdottir, 2021), and physical and mental health (Du Mont & Forte, 2016; Pascoe & Smart Richman, 2009; Schmitt et al., 2014).

Statistics Canada's General Social Survey (GSS) is a primary source for data on self-perceived discrimination. The GSS is a cross-sectional, national household survey that is conducted on an annual basis. The objectives of the GSS program are to monitor changes in the well-being of Canadians over time and to provide relevant information on social policy issues (Statistics Canada, 2019). Each cycle of the GSS focuses on a thematic topic, which is repeated every five to seven years. Recent GSS cycles on social identity (2013, 2020) and victimization (2014, 2019) have included questions on self-perceived discrimination.[2] The 2013, 2019 and 2020 cycles were administered with computer-assisted telephone interviews (CATIs) and self-completed electronic questionnaires (EQs), while the 2014 cycle offered the CATI option only. The EQ option was introduced for some cycles in 2013, and the percentage of respondents using this option has increased significantly since then.

Both survey mode and survey context have been identified as sources of variation on subjective measures, affecting differences in responses to questions on life satisfaction, happiness, job satisfaction, self-reported financial difficulty and self-assessed health (Bonikowska et al., 2014; Breunig & McKibbin, 2011; Davillas, de Oliveira & Jones, 2022; Dolan & Kavetsos, 2016; Schork et al., 2021). However, it is unknown if responses to questions on self-perceived discrimination are also sensitive to survey mode and survey context. This raises a concern about whether or how the GSS can be used to monitor changes in the prevalence of self-perceived discrimination over time. To provide policy-relevant information, it is imperative to understand the extent to which variation in the prevalence of self-perceived discrimination across GSS cycles is attributable to

1 Audit studies and field experiments are sometimes used to gauge discrimination. For instance, Oreopoulos (2011) sent out thousands of randomly created resumes in response to online job postings. The resumes were designed to represent recently arrived immigrants from China, India, Pakistan, and Britain, as well as non-immigrants with and without ethnic-sounding names. The results suggest considerable employer discrimination against applicants with ethnic names or with foreign experience. Audit studies and field experiments likely produce more objective results than household surveys, but they are often limited to settings (e.g., job application) and population groups covered (e.g., with ethnic-sounding names).

2 The 2004 GSS on victimization was the first time the discrimination question was included in the GSS. The question was also included in the 2009 cycle on victimization. The 2016 GSS, which focused on work and home life, also included a question on discrimination, but it was restricted to discrimination in the workplace.

differences in survey collection mode and thematic context.[3] Without accounting for these sources of variation, estimates of changes in the prevalence of self-perceived discrimination may be incorrectly attributed to societal change.

This article investigates reasons for variation in the rate of self-perceived racial discrimination across the 2013, 2014, 2019 and 2020 cycles of the GSS—the four most recent cycles that included a question on this issue. In particular, the analysis compares how survey mode, survey context (i.e., thematic topic) and sample design contribute to this variation. The analysis focuses on individuals who were aged 15 to 74 years and self-identified as members of designated visible minority groups. Additional analysis is conducted separately for South Asians, Chinese and Blacks.[4]

Survey background

In the GSS, self-reported racial discrimination has been measured with a yes or no question. In the 2013, 2014 and 2019 cycles, respondents were asked, "In the past five years, have you experienced discrimination or been treated unfairly by others in Canada because of your race or colour?" This question was modified slightly in the 2020 GSS: "In the 5 years before the Covid-19 pandemic, have you experienced discrimination or been treated unfairly by others in Canada because of your race or colour?" This modification was designed to differentiate respondents' perceptions of discrimination before and since the pandemic began.[5] The GSS further defined discrimination as being treated "differently, negatively or adversely" because of one's race. While the question on racial discrimination was essentially the same, there were considerable differences across the four cycles in collection mode, survey context, sample design and response rates.[6,7]

Computer-assisted telephone interviewing was the primary collection mode for the 2013 GSS (for 75% of the respondents, with the remaining 25% collected through self-completed EQs) and the only collection mode for the 2014 GSS. The Internet option—an EQ filled by the respondent

3 This article does not perform a formal evaluation of mode effects. The best approach to evaluating the presence of mode effects would involve setting up a properly designed experiment that randomly assigns half the sample to CATIs and half the sample to EQs. In the absence of such an experiment, evaluation is often done through observational approaches, including propensity score analysis and regression models (Zanutto, 2006). These statistical analyses mimic randomization and reduce the bias from confounding variables. The propensity score method helps make two samples comparable by controlling the samples for auxiliary variables that are available for all respondents. Statistics Canada's Social Statistics Methods Division has used both the propensity score method and multiple regression models to evaluate mode effects in several cycles of the GSS that used multimode collection (Golparvar, 2021; SSMD, 2022). These analyses found little evidence of mode effects for factual variables, but mode effects were found for variables subject to social desirability. The authors thank Amanda Halladay for these points. This article relies on regression models since the purpose is not to evaluate mode effects within each GSS cycle; rather, the purpose is to examine whether responses to the racial discrimination question collected by the same mode remained stable across different cycles.

4 Only these three groups had large enough sample sizes for reliable comparisons across cycles of the GSS. Refer to the *General Social Survey User Guide* for the recommended sample size thresholds for proportions and counts for visible minority estimates (Statistics Canada, 2021).

5 A subsequent question asked, "Since the beginning of the Covid-19 pandemic, have you experienced discrimination or been treated unfairly by others in Canada because of your race or colour?"

6 The overall response rate was 48%, 53%, 36% and 40% for the 2013, 2014, 2019 and 2020 cycles, respectively. These overall response rates were not directly comparable because of changes in sampling frames and different oversamples (Statistics Canada, 2020, 2021). For instance, the lower response rate for the 2019 cycle was because of the very low response rate of the oversample (22%); the response rate of the regular sample was 41% (Statistics Canada, 2020).

7 There was also a difference in how the question was presented and responses were recorded across these GSS cycles. In 2013, 2014 and 2019, the question was either read or presented as yes or no answers, and the missing rate ranged from 1.5% to 1.9%. In 2020, instead of a yes or no answer, it was a mark-all list with the final option being "did not experience discrimination" (personal communication with the GSS survey team). With this screen design, the missing value was 5.6% in 2020. In this article, missing responses to the racial discrimination question were excluded from the analysis.

online—was the primary collection mode for the 2019 and 2020 cycles (59% and 81%, respectively). The comparability of survey data collected with telephone and may be constrained in two respects. Selection into telephone versus Internet surveys is known to differ across sociodemographic characteristics such as age, income, and sex, and Internet connectivity and use also differ across these characteristics (Sarracino et al., 2017; Wavrock et al., 2021). The implication is that over- or under-representation of specific segments of the target population in telephone interviews versus online questionnaires can influence estimates if these selection effects are correlated with the outcome variable and pertinent sociodemographic characteristics are not accounted for in the construction of sampling weights.

Mode-specific response bias is another possible source of variation. It refers to the variation in measurement of an outcome variable across different collection modes among respondents with the same sociodemographic characteristics (Sarracino et al., 2017; Schork et al., 2021). Previous studies have found that respondents tend to provide more positive evaluations of their subjective well-being on telephone interviews than on EQs (Dolan & Kavetsos, 2016; Sarracino et al., 2017; Schork et al., 2021). For several reasons, identically worded questions can yield different responses across survey modes (for an overview, see Dillman & Christian, 2005). For example, social desirability bias refers to the tendency of respondents to provide positive answers about their well-being in the presence of an interviewer, which is based on a cultural expectation to provide favourable responses or to avoid divulging negative or stigmatizing experiences.

Survey thematic context may also affect responses to the question on discrimination. Responses to subjective questions may not have straightforward answers or be definite in the minds of respondents, and the contextual information that a survey provides can frame their thought processes in formulating a response (Dillman & Christian, 2005; Schork et al., 2021). Previous research has found that differences in survey context is a source of variation for differences in the distributions of life satisfaction scores observed across multiple GSS cycles. The best score was observed on the 2009 cycle focused on victimization, and the least favourable scores were observed on the 2005 and 2010 cycles focused on time use (Bonikowska et al., 2014). The combination of survey context and placement of the life satisfaction question accounted for 50% to 100% of yearly variation in life satisfaction scores. In the 2013, 2014, 2019 and 2020 GSS cycles, the questions on self-perceived discrimination were placed near the end of the survey following a battery of thematic questions. The thematic topic of the 2013 and 2020 cycles was social identity, and these surveys collected data on social contacts, trust in people and institutions, community and civic engagement, and values and attitudes. The thematic topic of the 2014 and 2019 cycles was victimization, and these surveys collected data on experiences of criminal victimization, intimate partner violence, contact with the police, social disorder, and perceptions of safety and crime. It is possible that responses to the discrimination question differ between the surveys on social identity and victimization.

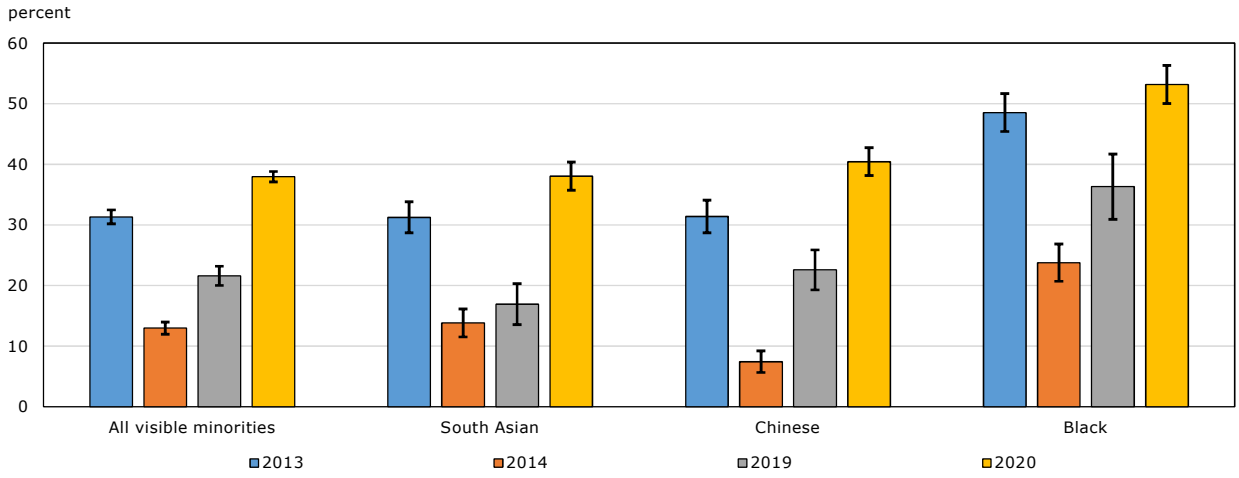
The four GSS cycles also differed in sample design. The 2013 GSS and 2014 GSS added oversamples of immigrants and youth to its regular sample. The 2019 added an oversample of Indigenous people, while the 2020 GSS added a large oversample of selected visible minority groups. Relative to the regular GSS sample, the oversamples were based on a separate sample stratification and targeted specific geographic or demographic areas (Statistics Canada, 2014, 2015, 2020, 2021).[8] It is unknown whether the oversample and the regular sample respondents differ in their responses to the question on self-perceived racial discrimination.

8 In addition, the cycles on victimization collected data from the territories, while the cycles on social identity did not.

Results

Chart 1 shows the percentage of GSS respondents who reported racial discrimination among all visible minorities and those who identified as South Asian, Chinese and Black. The overall rate of self-perceived racial discrimination decreased from 31% in 2013 to 13% in 2014, and then increased to 22% in 2019 and further to 38% in 2020. Particularly noteworthy are the large year-over-year differences. The percentage of visible minority respondents who reported racial discrimination decreased by 18 percentage points between 2013 and 2014, and increased by 16 percentage points between 2019 and 2020. Similar variations are observed for each of the three sub-groups. Multivariate analyses show that key sociodemographic characteristics (sex, age, marital status, education, immigrant status, ability to speak English or French, employment status, and geographic region) accounted for little of the cross-cycle differences in the rate of self-perceived racial discrimination (model estimates are shown in Appendix Table 1).[9] This finding makes it clear that changes in the sociodemographic composition of the survey respondents are not the main driver of the observed changes in self-perceived racial discrimination.

Chart 1
Percent reporting perceived racial discrimination among visible minorities, aged 15 to 74, 2013, 2014, 2019 and 2020



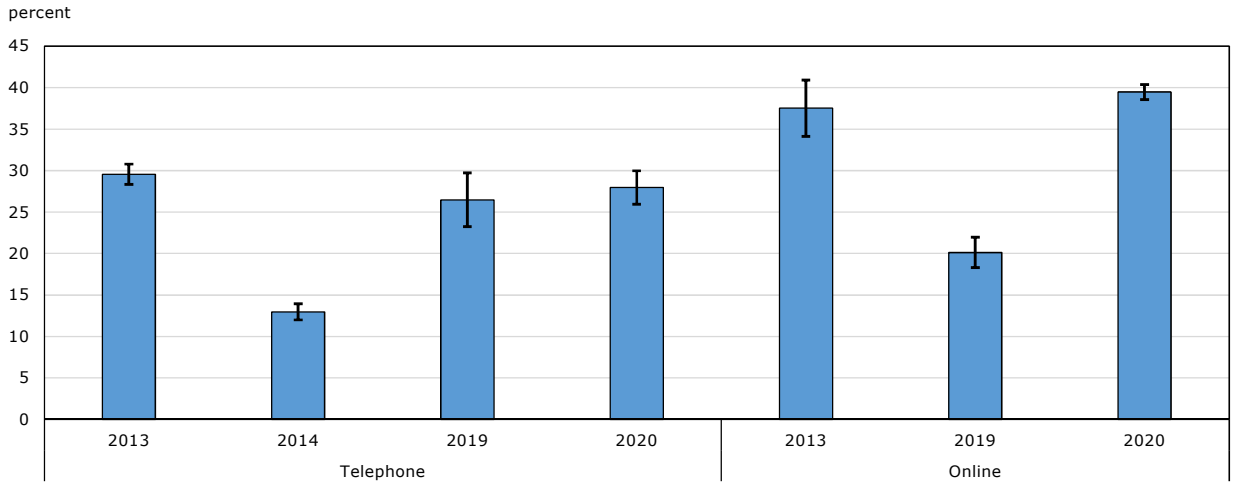
Note: The vertical lines overlaid on the bars indicate the 95% confidence interval.
Sources: Statistics Canada, General Social Survey, 2013, 2014, 2019 and 2020.

It is implausible that the large, cross-cycle differences in self-perceived racial discrimination observed in Chart 1 are mainly attributable to societal change at the national level. Other explanations, particularly the effects of collection mode and survey context, warrant assessment. Chart 2 compares rates of self-perceived racial discrimination across survey collection modes. Among the data collected by telephone interviews, the observed rates of self-perceived racial discrimination did not vary significantly across the 2013, 2019 and 2020 GSS cycles. This result remained the same when controlling for sociodemographic characteristics in multivariate analysis. The rate of self-perceived racial discrimination was significantly lower in 2014 than in the other cycles, with or without controls for sociodemographic characteristics (detailed model estimates not shown). Among the data collected online, there was no significant difference in the rate between 2013 and 2020. The rate was significantly lower in the 2019 cycle than in the 2013 and 2020 cycles, with or without controls for sociodemographic characteristics. The difference in the

9 The model does not control for possible behavioural and attitudinal correlates of self-reported discrimination for two reasons. First, like self-reported discrimination, other behavioral and attitudinal responses may be affected by survey mode and survey context. Second, with cross-sectional data, it is not possible to establish causal directions.

shares of telephone and online respondents accounted for all the difference in the rate of self-perceived racial discrimination between the 2013 and 2020 cycles on social identity.[10]

Chart 2
Percent reporting perceived racial discrimination among visible minorities, by survey collection mode



Note: The vertical lines overlaid on the bars indicate the 95% confidence interval.
Sources: Statistics Canada, General Social Survey, 2013, 2014, 2019 and 2020.

The responses also differed by survey context. In the 2013 and 2020 cycles on social identity, the rate of self-perceived racial discrimination among visible minorities was higher among online respondents than among telephone respondents. Compared with telephone respondents, the rate of self-perceived racial discrimination was 8 percentage points (or 10 percentage points with controls for sociodemographic characteristics) higher for online respondents in 2013 and 12 percentage points (or 14 percentage points with controls) higher in 2020. In the 2019 cycle on victimization, the rate of self-perceived racial discrimination was 6 percentage points lower (or 3 percentage points lower with controls, not statistically significant) among online respondents than among telephone respondents.[11]

There was also an interaction between survey mode and survey context that contributed to inconsistencies in the changes in the rate of self-perceived racial discrimination. Among telephone respondents on the GSS cycles on victimization, there was a 14 percentage point (13 points with controls for sociodemographic characteristics) increase in the rate between 2014 and 2019. In contrast, among telephone respondents on the cycles on social identity, the rate decreased 2 percentage points (3 points with controls) between 2013 and 2020, although this change was statistically nonsignificant. Secondly, between 2019 and 2020, the rate of self-perceived racial discrimination did not significantly change among telephone respondents, but the rate almost doubled among online respondents with or without controls for sociodemographic characteristics.

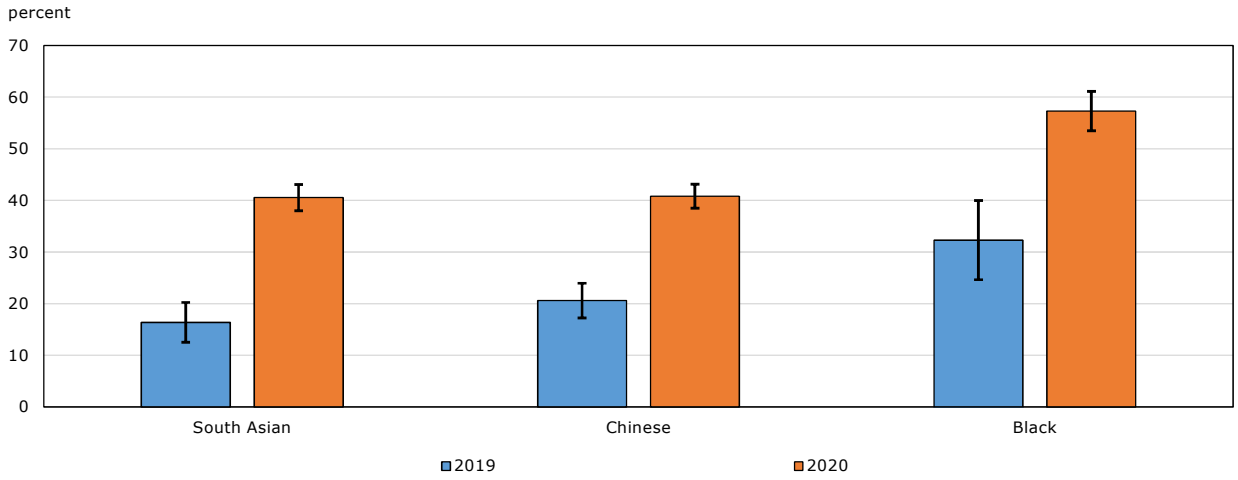
Survey context may be directly related to the difference in self-perceived racial discrimination between GSS cycles within the same survey mode. For telephone respondents, differences in survey context is a likely reason for the much lower rate of self-perceived racial discrimination in the 2014 cycle on victimization than in the 2013 cycle on social identity. Similarly, survey context is a likely explanation for at least part of the difference in the rate between online respondents in

10 In multivariate regression analysis that pooled visible minority respondents in the 2013 and 2020 cycles, the observed difference in the rate of self-perceived racial discrimination between 2013 and 2020 (6.6 percentage points, $p < 0.001$) became slightly larger (7.5 percentage points, $p < 0.001$) when selected sociodemographic characteristics were controlled. But the observed difference disappeared (to 0.1 percentage points) when collection mode was added to the model.

11 Between-mode comparisons could not be made for the GSS cycles on victimization because the 2014 survey was conducted with telephone interviews only.

the 2019 cycle on victimization and the 2020 cycle on social identity. The overall rate of self-perceived racial discrimination among online respondents was much higher in 2020 than in 2019, and was also higher in 2020 for South Asians, Chinese and Blacks (Chart 3). Conversely, the rates in 2019 and 2020 were similar for telephone respondents, and thus there was no context effect.[12]

Chart 3
Percent reporting perceived racial discrimination among visible minorities, online respondents, 2019 and 2020



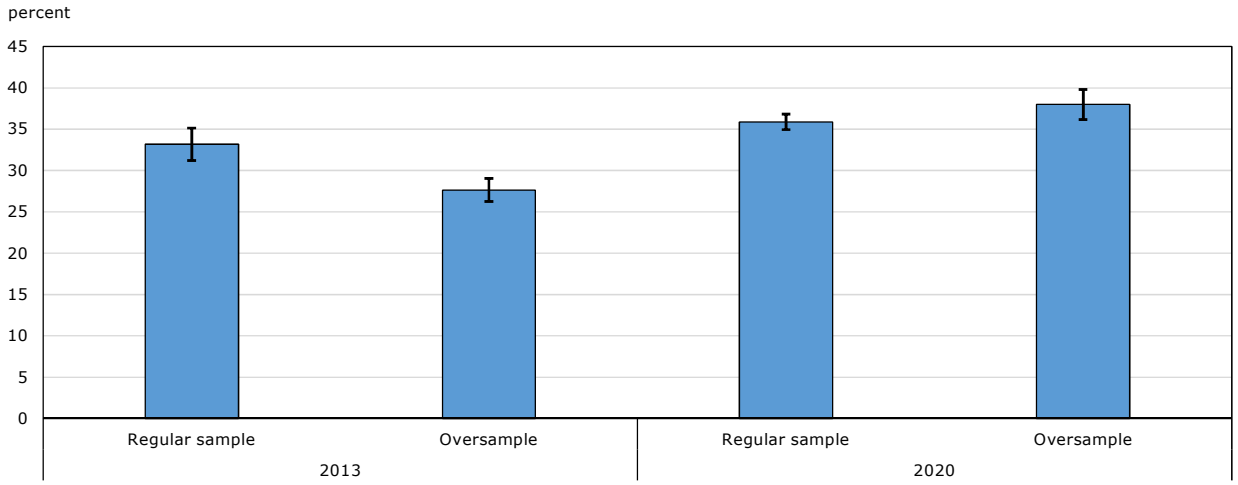
Note: The vertical lines overlaid on the bars indicate the 95% confidence interval.
Sources: Statistics Canada, General Social Survey, 2019 and 2020.

Different oversamples could be another potential factor for the variation in rates of self-perceived racial discrimination across GSS cycles. Chart 4 shows the rate of self-perceived racial discrimination for the regular sample and oversample in the 2013 and 2020 GSS cycles.[13] The oversample consisted of immigrants in the 2013 cycle and visible minorities in the 2020 cycle. The difference in the rate between the regular sample and oversample was statistically significant in 2013, but not in 2020. Visible minority immigrants, particularly recent arrivals, were less likely to report racial discrimination than their Canadian-born counterparts. When immigration status, ability to speak English or French, and survey mode were controlled, the difference in the rate between oversample and regular sample in 2013 became statistically nonsignificant. Furthermore, the differences in oversamples did not affect the observed change in the rate between 2013 and 2020, with or without controls for key sociodemographic characteristics.

12 Among telephone respondents, there were non-significant differences in the rates of self-perceived racial discrimination across the 2019 and 2020 cycles for all visible minorities as well as for South Asians, Chinese and Blacks. The differences between 2019 and 2020 in the rates among telephone respondents were smaller than 2 percentage points for South Asians and Blacks. The rate among Chinese respondents was 4 percentage points lower in 2020 than 2019. However, for each of the three groups, the sample size did not reach the threshold for reliable estimates.

13 Similar analysis could not be done for the 2014 and 2019 cycles because the microdata files of these cycles did not contain a variable that separates the regular sample and oversample.

Chart 4
Percent reporting perceived racial discrimination among visible minorities, by sample selection, 2013 and 2020



Note: The vertical lines overlaid on the bars indicate the 95% confidence interval.
Sources: Statistics Canada, General Social Survey, 2013 and 2020.

Summary and discussion

The General Social Survey (GSS) is a primary source of data for monitoring many social indicators in Canada. Since 2013, some GSS cycles have been conducted with both telephone and online questionnaires, and it is the case for all cycles starting in 2018. A multi-mode survey is intended to abate declines in response rates on telephone interviews and reduce survey administration costs (Schork et al., 2021; Statistics Canada, 2019). The GSS rotates survey content on an annual basis to cover different thematic topics. Both survey collection mode and survey context are known to influence responses to subjective questions, which poses a challenge for interpreting trends across GSS cycles.

This study compared the rate of self-perceived racial discrimination across four cycles of the GSS to examine the sensitivity of this indicator to mode effects, survey context and survey design. Clearly, collection mode and survey context have strong effects, while sample design (oversamples) has non-significant effects on the cross-cycle differences in the rate of self-perceived discrimination. The rate of self-perceived racial discrimination in 2014 (victimization) was less than half the rate observed in the previous year (social identity). In 2020 (social identity), the rate was almost triple that observed in 2014 (victimization). This increase could be partly attributable to movements and demonstrations (e.g., Black Lives Matter) that may have heightened sensitivity to perceptions of discrimination and unfair treatment (Cotter, 2022). However, the present study found that the rate of self-perceived discrimination among the Black population and other visible minorities did not significantly increase between 2013 and 2020 within the same collection mode. Hence, societal change was unlikely the primary reason for the fluctuations in self-perceived racial discrimination observed across the 2013, 2014, 2019 and 2020 GSS cycles. To a large extent, these are methodological artefacts that need to be accounted for in the measurement of rates of self-perceived racial discrimination in the GSS.

In the 2013 and 2020 cycles of the GSS (social identity), online respondents reported a higher rate of self-perceived racial discrimination compared with telephone respondents. In contrast, online respondents on the 2019 GSS (victimization) reported a lower rate than telephone respondents. The higher rates observed among online respondents in the 2013 and 2020 cycles are consistent with previous studies that demonstrate that online responses to subjective measures of well-being tend to be less positive than responses from telephone interviews (Dolan & Kavetsos, 2016; Sarracino et al., 2017; Schork et al., 2021). The present study provided a

comparison of differences in self-perceived discrimination across collection modes, but was not a statistical mode-effect study. However, the findings are consistent with a study that used a propensity score analysis that aimed to formally isolate mode effects, which found a mode effect on self-perceived discrimination in the 2020 GSS (SSMD, 2022). It is unknown which estimates—telephone versus online responses—are nearest to the actual value in the target population (Schork et al., 2021).

Survey context is another source of variation in the rate of self-perceived racial discrimination across cycles of the GSS, and the largest differences in the rate across GSS cycles are observed when there are context differences. The large decrease between 2013 and 2014 and the large increase between 2019 and 2020 suggest this finding. The 2014 and 2019 cycles focused on victimization, while the 2013 and 2020 cycles focused on social identity. The battery of questions on criminal victimization and social disorder in the 2014 and 2019 cycles may have put the question on perceived racial discrimination in a different context than in the cycles on social identity. For example, it may be that a lack of negative experiences on the questions on crime and victimization could increase respondents' subjective evaluations in other respects (Bonikowska et al., 2014). Conversely, in the 2013 and 2020 cycles on social identity, the discrimination question was asked after a series of questions on social contact, civic engagement, political participation, and perceptions about Canadian achievements, institutions, and shared values. These preceding questions may set up a high standard for respondents to evaluate their perception of racial discrimination. The observed large survey context effect suggests that the GSS should not be viewed as a repeated annual survey, but rather as a series of distinct surveys on different topics. Furthermore, comparisons on subjective indicators should be made only between surveys with the same theme.

It is recommended that questions on self-perceived racial discrimination be compared with caution across years because of differences in survey mode of administration and survey context across GSS cycles. Also, any comparisons of the rate of self-perceived racial discrimination should be restricted to cycles with the same survey context. Additionally, the GSS cycles administered with CATIs and EQs include a variable for survey collection mode, which can be used to control for mode effects in regression analysis.

Although questions with subjective content are known to be sensitive to survey mode and context effects, questions with objective content are less vulnerable to these effects (Schork et al., 2021). Accordingly, a direction for future research is to investigate indicators of racial discrimination that consist of questions that have more specific or objective content, such as those on the Everyday Discrimination Scale (see Sternthal et al., 2005; Williams et al., 1997), which may improve comparability.

Appendix Table 1

Logit models predicting self-reported racial discrimination among visible minorities aged 15 to 74, 2013, 2014, 2019 and 2022 General Social Survey

	Model 1		Model 2	
	Marginal effects	Standard error	Marginal effects	Standard error
		proportion		
Survey year (reference: 2020)				
2013	-0.066 ***	0.017	-0.075 ***	0.016
2014	-0.250 ***	0.015	-0.254 ***	0.014
2019	-0.164 ***	0.018	-0.158 ***	0.018
Age group (reference: 65 to 74)				
15 to 24	… ‡	… ‡	0.080 *	0.037
25 to 34	… ‡	… ‡	0.072 *	0.030
35 to 44	… ‡	… ‡	0.022	0.028
45 to 54	… ‡	… ‡	0.035	0.029
55 to 64	… ‡	… ‡	0.009	0.028
Woman	… ‡	… ‡	0.005	0.014
Marital status (reference: married)				
Common law	… ‡	… ‡	0.066 *	0.032
Widowed	… ‡	… ‡	-0.005	0.055
Divorced or separated	… ‡	… ‡	0.021	0.026
Never married	… ‡	… ‡	0.040 *	0.020
Education (reference: university degree)				
Some postsecondary	… ‡	… ‡	0.021	0.017
High school graduation	… ‡	… ‡	-0.008	0.020
Less than high school	… ‡	… ‡	-0.081 **	0.027
Education level not reported	… ‡	… ‡	-0.108	0.064
Immigration status (reference: Canadian born)				
Immigrated to Canada 10 years or less ago	… ‡	… ‡	-0.054 *	0.023
Immigrated to Canada over 10 years ago	… ‡	… ‡	-0.034	0.021
Temporary residents	… ‡	… ‡	-0.109 ***	0.026
Does not speak English or French at home	… ‡	… ‡	-0.035 *	0.015
Employment status (reference: employed)				
Unemployed	… ‡	… ‡	0.004	0.023
Not in labour force	… ‡	… ‡	-0.077 ***	0.018
Visible minority groups (reference: other groups)				
South Asian	… ‡	… ‡	0.042 *	0.018
Chinese	… ‡	… ‡	0.050 **	0.017
Black	… ‡	… ‡	0.208 ***	0.022

… not applicable

‡ not included in the model

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

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

*** significantly different from reference category ($p < 0.001$)

Notes: The sample size for all models is 25736. The model pseudo R-squared is 0.037 for Model 1 and 0.081 for Model 2. Model 2 also controls for province fixed effects.

Sources: Statistics Canada, General Social Survey, 2013, 2014, 2019 and 2020.

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