Thinking About Poverty

Part 2: Counting the Poor—
The Empirical Evidence

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Counting the Poor: The Empirical Evidence

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Executive summary

This essay presents empirical evidence about poverty in Canada. It employs a basic needs approach to defining and measuring poverty and uses three different Statistics Canada databases to help estimate the prevalence of poverty. It also examines the weaknesses of both the Statistics Canada data and the basic needs poverty measure. It is important to understand that data is not perfect and no measure of poverty is going to be perfect. With that out of the way, we can focus some attention on the most important findings.

In terms of the incidence of "income poverty," that is, the number and percentage of Canadian households (and individuals) with reported incomes below the basic needs threshold, data from the three Statistics Canada databases are broadly consistent. Income poverty for households appears to be in the 5 to 7 percent range; for individuals, it is in the 4 to 6 percent range. From my perspective, it is quite remarkable that three databases, each constructed differently and for different purposes, should have such similar results. Only one of the databases (the Survey of Household Spending) was able to determine "consumption poverty" and it found that in 2019 less than 3 percent of Canadians had consumption levels below the basic needs line. For a variety of reasons (chiefly database incompatibility) we were unable to present a long term trend for poverty rates. However, based on the data we do have now and the results of past estimates, we can tentatively suggest that basic needs poverty is at an all-time low. This is no reason to celebrate; rather it is a reason to ask why and how we have any basic needs poverty at all.

Among the most surprising results coming from the data is that more than half of all poor individuals are single (mainly men) living on

their own. This is a fundamental change in the face of poverty over the past two or three decades. However, the evidence also suggests that a number of poor single individuals may be students still in school (mainly college and university). Also revealing was the result that consumption by poor Canadians does not appear to be as far from the mainstream as some would suggest. The fact that poor households have computers, cellphones, and internet access at rates not too different from non-poor households suggests that claims of "exclusion" might be exaggerated. Finally, it is worth noting that 67 percent of households that fall below the basic needs income threshold maintain that they are "food secure."

It is important to reiterate a point made frequently in this and the first essay. These results are tentative because they are based on imperfect surveys, databases, and poverty lines. This is no criticism of these instruments. All involved do the best they can with the resources they have available. However, so much about poverty is hidden. This argues for a new approach, one that would take a much deeper look at households and their economic situation and that would give us a better sense of the prevalence of poverty as well as a better understanding of its nature and causes.

This second paper in the series addressing poverty in Canada critically examines evidence related to the number and percentage of poor in Canada. Future essays will discuss and examine policies related to poverty.

Introduction

In order to count the poor, we need to establish several things.

1. We need a definition of poverty that relates to a threshold at which something meaningful and important is likely to happen.
2. We need a way to operationalize that definition (i.e., turn the theoretical concept into a practical, useable application) in terms of the resources required to determine whether a person or household is below or above that threshold.
3. We need a database that accurately reflects the resources available to people or households and that represents the entire society that is under examination.
4. Above all, we need to be fully transparent by explaining terms and methodologies at each stage to allow for replicability and critical analysis.

It seems, from my perspective, that these steps are necessary if we are to try to credibly count the number and percentage of people living in poverty. So, let's proceed to work through each of these steps prior to the actual measurement.

Defining poverty

The first essay dealt with the matter of definition in great detail. It compared the absolute and relative approaches to poverty and critically evaluated them. "Absolute" poverty is a misnomer. This author prefers the term "basic needs" rather than "absolute" because all definitions must involve some aspect of relativity. The basic needs approach considers poverty to be a predicament of serious deprivation and defines it accordingly. Specifically, a person is poor if they lack any necessity required for longer term physical well-being. So, for every person there will be a threshold below which physical health and well-being is likely to be compromised or threatened. This could be in the form of persistent hunger, an unhealthy diet, inadequate housing, improper clothing and footwear, or inadequate access to doctors and medicines. Lacking the resources needed to cover all of the necessities makes a person (or household) poor. For every person, there is a threshold below which we have insufficiency and that puts physical well-being at risk. That condition is worth measuring. And that is the definition and approach to understanding poverty this essay uses.

Operationalizing the poverty threshold

Purely relative conceptions of poverty view poverty as a state of being "unequal" and we can easily operationalize that using a simple formula connecting the threshold to average living standards. With the basic needs approach used in this essay, operationalizing is not simple at all. It calls for the use of a "budget standard approach," that is, a specific list of every necessity, and its cost, that a person or household requires. This is no small task and organizations that have used this approach will normally employ a team of people to construct the poverty threshold. For example, Statistics Canada has, in recent years, used a budget standard approach to determine the Market Basket Measure (MBM) which the current government considers to be Canada's official poverty line. The current revision of the MBM required a team of economists and more than two years to complete.

The basic needs line, in contrast, had a more modest origin. The latest fulsome revision was just over 20 years ago and was completed by this author and a student assistant. Since that time it has been updated using the all-items component of the CPI. Ideally, a budget standard poverty threshold should be revised every decade (at least) to reconsider the list of basic needs and reconstruct the threshold accordingly. While that kind of project is currently beyond the capabilities of this author, I

have elsewhere suggested how such a project should be conducted (Sarlo, 2013: 15).

To summarize, the basic needs poverty threshold is operationalized (turned into a practical, useable application) by the use of a budget standard where a list of necessities is presented and costed out for households of different sizes (Sarlo, 2001: 19-32). I wish to emphasize that while different researchers will differ on what exactly constitutes a necessity, the basic needs list is guided by the definition above, that is, any good or service required for long-term physical well-being. It is important to remember as well that a poverty threshold is not a measure of what we want the poor to have (in that case, the sky is the limit) but rather it is a device to help us count the number of people whose physical well-being is at risk because of a lack of one or more basic needs.

So, the number that is determined, say $32,000 for a family of four in an average-sized urban centre in Canada in 2022, gives us an estimate of the amount of after-tax income that this family must have to cover its basic needs for the year. This is the level of consumption that would be required to escape poverty. Clearly, this number would be higher for large urban centres like Toronto, Vancouver, Calgary, and Ottawa, but would be correspondingly lower for smaller urban and most rural communities. The use of an average poverty threshold does not permit useful geographical comparisons (often the data is not rich enough to permit that in any case), however, it should give us broadly reliable estimates of numbers and trends for the nation to the extent that the average is reasonably accurate.[12]

Database reliability

Statistics Canada's data gathering and analysis is undoubtedly world class. However, determining the level of a person's actual (real) resources is very difficult. Income databases, of which there are several in use, are the go-to resource for most researchers looking at poverty and living standard inquiries. Some researchers, including this author, also use consumption information for the same purpose—either alone or in combination with income. The income and consumption databases that we have from

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[12] As we discuss later on in this essay, it is unwise to be too precious about precision in measuring poverty given all of the issues related to data and to differences in human behaviour. It is also important to appreciate that there are differences, sometimes very large differences, between people in terms of the amount they require to cover their needs. A person living with a severe disability will have different requirements than a healthy and thrifty person. This suggests that, if we are interested in poverty at a more granular level, we would need a personal poverty threshold.

Statistics Canada are drawn from random sample surveys of Canadian households using questionnaires, tax filer data, and imputed information from other sources like the census. As we can appreciate, when asked about personal information for the previous 12 months, not everyone will remember important details and not everyone will be truthful even if they do. As for tax filer data, it would not be an exaggeration to say that there are many tax returns that do not fully reflect reality. In some cases, the errors are not intentional and are the result of poor (or no) record keeping, sloppiness, or disinterest. However, in many cases, inaccuracies are the result of tax avoidance. In Canada, the CRA has a number of ways to uncover intentionally erroneous tax files including reviews, requests for additional documentation, audits, and investigations. In 2017-18, they uncovered $13.6 billion in undeclared taxable revenue just through the audit process (Canada, 2022a).

Unreported income, mainly from earnings in the service, entertainment, construction, and sex industries, is very difficult to track down. Despite its best efforts, Statistics Canada is not able to present databases that are accurate representations of Canadian incomes, especially at the lower end of the distribution, and this calls into question any study estimating poverty. In 2015, two Bank of Canada researchers, Dunbar and Fu, examined the extent of underreporting and its likely impact on poverty estimations. They concluded that 35 to 50 percent of respondents underreport some income. For households with an annual income of less than $20,000, between 60 and 70 percent appear to be underreporting. The authors also note that the problem of underreporting appeared to increase over the time of their study: 1998 to 2004. Further, the total amount of underreported income is substantial, approximately 14 to 19 percent of GDP. They conclude by expressing concern that "poverty measures that rely on reported income appear unreliable" (Dunbar and Fu, 2015: 4) because of the amount of underreported income.

One other important concern regarding the information provided by Statistics Canada is the apparent inconsistencies between different databases. In an earlier paper (Sarlo, 2008: 11-12), I estimated poverty rates and trends using two different databases, namely the Family Expenditure survey (FAMEX) and the Survey of Consumer Finances (SCF), both of which are random surveys purporting to represent all of Canada and both of which collect income data. This was done for comparison purposes with the expectation of broad consistency in the levels and trends in poverty. However, there were sharp differences in the results using the two databases. Over the period 1973 to 1996, the estimated poverty rate using the SCF database was fully double that using the FAMEX database and the trend lines were much different as well. This level of difference

should concern both statistical agencies that collect and publish data and researchers who use that same data. At the very least, research authors need to warn readers about the potential weakness of the data they use.

Finally, it is important to mention what these databases omit. Their coverage does not typically include persons in long-term care and in other institutions such as hospitals and prisons. This omission is not likely to be a concern for the measurement of basic needs poverty as we expect that people in these institutions have, at least, basic necessities covered. Of more importance however, is that coverage also excludes most people living on native reservations and homeless people. This is a significant omission as many living on reservations do live in poverty and, clearly, homeless people by definition are the poorest of the poor. On the other hand, certain kinds of resources are not counted as income but are important in the measurement of basic needs poverty. Gifts of cash and in-kind gifts could constitute an important gap in the process of counting the poor. This happens formally (often through agencies and churches) and informally (as between family members and friends) and serves to expand consumption possibilities but will not be picked up when recording income.[13]

Empirical evidence of poverty in Canada

Keeping in mind the above warnings related to the data most commonly used to measure the poor, we proceed cautiously to estimate the number of households and the number of individuals whose income is below a threshold deemed "insufficient." This is, as explained in the first essay in this series, merely a first step of identifying and counting those likely to be living in poverty.

Since the government of Canada designated the MBM as Canada's "official" poverty line in 2018, it is instructive to begin there. The MBM poverty line and the corresponding poverty rate is interesting in its own right and also as a comparator to the basic needs poverty results that will be displayed next.

a) Using Canada's "official" poverty measure (MBM)

The construction of the MBM is quite complex. A team of researchers at Statistics Canada has built the MBM over 20 years as a largely budget-based threshold that purports to represent "thresholds of poverty based

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[13] Included here would be anything from parents helping their college-bound children to rent subsidies to food banks to many GoFundMe projects.

upon the cost of a basket of food, clothing, shelter, transportation, and other items for individuals and families representing a modest, basic standard of living" (Heisz, 2019: 6). Because of regional variations in food, rent, and other important costs, the MBM thresholds are determined for 19 specific metro areas as well as for smaller population groupings in different provinces. Pulling together all of the detailed costs for all of the communities across the country is clearly an enormous task.

Sarlo (2020) contains a thorough-going critique of the latest version of the MBM. The author points out that the framers of the MBM reject both the purely relative approach (for example, a "poverty" line set at half of the median income) and the basic needs approach:

> The authors of the MBM made it quite clear that they view their low-income threshold (the now official poverty line) as a pragmatic compromise between a basic needs measure of poverty and a relative measure that captures inclusion. They set about structuring a basket that substantially exceeds the necessities because they believe that even poor people should have goods that are commonly consumed by most in society. In the latest revision, they have added items or adjusted the quality and quantity of existing basket items to conform more closely to what they perceive to be broadly accepted societal standards. And there cannot be a Canadian that does not want all of that and more for people who are struggling in poverty. But is that the best way to measure poverty? Is it possible that we are confusing what we want for the poor with the need to measure a very important human situation? Should a poverty line be a goal (for the poor) or should it be a useful threshold that identifies a serious problem? (Sarlo, 2020: 35)

As a result of the efforts to situate the MBM at a level deemed to be a "modest standard of living," its thresholds are higher than might be expected of a "poverty line." For example, in five of our largest cities, the MBM lines are $50,000 per annum (or more) for a family of four in 2022. It is important to understand that this amount is the disposable income that a family of four must have to avoid impoverishment. The MBM definition of "disposable income" is not only after-tax income but is also after other "non-discretionary expenses including Canada Pension Plan and Quebec Pension Plan contributions, Employment Insurance and Registered Pension Plan contributions, union dues, child care expenses, spousal support payments paid, public health insurance premiums, and direct medical

Figure 1: MBM Poverty Trend

Canada's Official Poverty Line
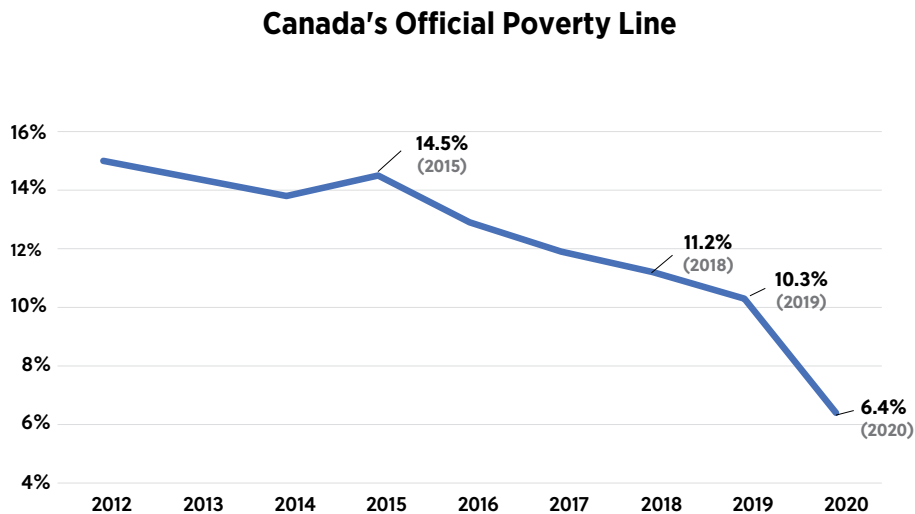
Source: Statistics Canada, 2022a.

expenses including private insurance premiums."[14] It is likely that most of the MBM poor must earn substantially in excess of the MBM thresholds to be still counted as poor.

Figure 1 shows the trend in the percentage of Canadians falling below the MBM (poverty) threshold over the period 2012 to 2020.

Whatever one thinks about the credibility of the MBM lines as measures of "poverty," figure 1 shows that there has been a remarkable reduction in the number of Canadians living on incomes below the MBM threshold over the period. MBM "poverty" has declined from 15 percent down to 6.4 percent over the nine-year period. Not since the early 1970s

[14] See https://www150.statcan.gc.ca/n1/pub/75f0002m/75f0002m2019014-eng.htm. Note that while CCB cash benefits are not taxable and do not have to be reported as income on a tax return, they are considered as income in calculating total income for the purposes of surveys. So some households (such as those with qualifying children) could have earnings of $50,000 and still be left with disposable income of $50,000 to the extent that the CCB and other considerations offset the income tax hit. For all other households, their earnings must exceed the MBM poverty threshold by the amount of the tax and other deductions. It is likely that this consideration will only have an impact on a minority of MBM poor. We won't know until we get a detailed decomposition of the poor, for example, by family type, by age, by source of income, by education, and by employment status.

have we had improvements like that. In terms of measurement, Statistics Canada uses the Canadian Income Survey (CIS) database to estimate MBM poverty levels. It important to note that the last data point, in 2020, would have been prior to the full economic impact of the pandemic response.

b) Using the Basic Needs poverty measure

The process of estimating basic needs poverty begins with the last revision of the basic needs poverty line (published in 2001) and updating it using the all-items consumer price index (CPI). As explained earlier, this is certainly not ideal. We would prefer to have thorough-going revisions every decade (or even every five years) but they are well beyond the resources available to this author. So, the updated lines should be viewed as rough approximations of the after-tax incomes required to avoid poverty. Of course, having sufficient income is still no guarantee that individuals and families won't have unmet needs. As with any poverty threshold, we assume that individuals spend only on their list of necessities. Given the variations in human behaviour, that will not always be the case.

Table 1 displays the updated basic needs poverty lines from 1997 to 2021.

These thresholds represent the after-tax income that a single person would require, on average, to cover all of their basic necessities. Since this is an average for Canada, clearly costs would be higher in some locations (for example, Toronto, Vancouver, and Calgary) and would be lower in other locations (for example Quebec and the Maritimes, as well as in smaller communities and rural locations). So, the basic needs lines attempt to capture a weighted average of the entire nation, excluding native reservations and the Territories.

Obviously, there needs to be some reasonable way to impute the poverty lines for families of different sizes from the information in table 1. To do that, this paper uses the "square root equivalence scale." This is the same scale Statistics Canada uses in its construction of the MBM. An equivalence scale purports to determine the amount of income that is needed to generate the same standard of living (or "welfare" more broadly) that the reference household experiences, in this case, a household of one person. It does this using a ratio, which is calculated as the square root of household size. For example, a household of four persons would require twice the income as a household of one person to have the same or equivalent standard of living.

Table 1: Updating the Basic Needs Poverty Thresholds, 1997-2021

Year	CPI	BNPL
1997	90.4	9,611
1998	91.3	9,706
1999	92.9	9,876
2000	95.4	10,142
2001	97.8	10,397
2002	100.0	10,631
2003	102.8	10,929
2004	104.7	11,131
2005	107.0	11,375
2006	109.1	11,599
2007	111.5	11,854
2008	114.1	12,130
2009	114.4	12,162
2010	116.5	12,385
2011	119.9	12,747
2012	121.7	12,938
2013	122.8	13,055
2014	125.2	13,310
2015	126.6	13,459
2016	128.4	13,650
2017	130.4	13,863
2018	133.4	14,182
2019	136.0	14,458
2020	137.0	14,565
2021	141.6	15,054

Source: Statistics Canada (2022b) and calculations by the author.

"Equivilized" incomes

So, if the poverty line for a single person in 2021 is $15,000, the poverty line for a family of four would be $30,000 (simply the square root of 4 times the $15,000) and the poverty line for a family of three persons would be $25,981 using the same method. In order to measure poverty from a database of household incomes, you would first determine the "equivilized" income of each household by dividing each household's income by the square root of the number of persons in the household. For example, if the after-tax income of a particular household of four persons is $100,000, its equivilized income would be $50,000. In this way, we place all households on the same footing in terms of their living standard. Otherwise, it would not make sense to directly compare households of different compositions.

The estimation of basic needs poverty (as a first step in counting the poor) employs three different databases, all of which contain income information gathered from randomized surveys of Canadians by Statistics Canada. The databases are the Canadian Income Survey (CIS), the Survey of Household Spending (SHS), and the SPSD/M simulation model, which combines data from a number of sources, including the CIS, SHS, and the census.

Canadian Income Survey (CIS)

The CIS is arguably the primary source of information on the current income of Canadians. It provides data for individuals on sources of income, key household demographic information, and labour market activity. The CIS has been produced annually since 2012 and is a successor database to prior, similar surveys (the Survey of Consumer Finances (SCF) and the Survey of Labour and Income Dynamics (SLID). It is not clear that the methods of each of these surveys is similar enough to be able to connect up the results from each in a continuous fashion.[15] The author has acquired two CIS microdata files through the data liberation initiative: one for 2015 and another for 2018. Table 2 displays the results for basic needs poverty.

To the extent that the data in the CIS surveys are reliable (and we have expressed concerns about survey data in general), the estimation of basic needs poverty appears to be in the same range as previous estimates.[16]

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[15] In any case, microdata public use (PUMF) files of the CIS prior to 2015 were archived and inaccessible at the time this research was being done.

[16] In Sarlo (2008), the income poverty (basic needs) rate for individuals was shown to be in the 5 to 7 percent range by 2005, depending on the database and equivalence

Table 2: Counting the Poor Using the Canadian Income Survey, 2015 and 2018

Category	2015	2018
Poverty Line (one person)	**13,459**	**14,182**
Number of Poor Households	1,338,584	1,126,436
Percent of All Households	**8.81**	**7.15**
Number of Poor Individuals	1,930,679	1,536,118
Percent of All Persons	**5.51**	**4.23**

Source: Statistics Canada, Canadian Income Survey, microdata (PUMF) files for 2015 and 2018; and calculations by the author.

As we did in previous analyses of poverty, we examined the types of households the poor are part of. Table 3 displays the income of the poor by household type for both 2015 and 2018.

Several important results stand out in table 3. Fully 55 percent of poor households are non-elderly individuals, mainly men, living alone. This confirms the results found in Sarlo (2013). Basic needs poverty, it would seem, is a scourge that especially impacts single persons living alone. On the other hand, households composed of couples with no children account for about 11 percent of the poor and couples with children about 16 percent. Finally, lone-parent families, once the very face of poverty (at least in the media), by 2018 make up less than 8 percent of poor households. Thirty years prior, in 1988, single-parent families accounted for almost 50 percent of all households living in basic needs poverty and had, by far, the highest poverty rates. This is the most notable change, I think, in the nature of poverty over the past three decades (Sarlo, 1992: 134-35).

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scale used. In Sarlo (2013), using the SHS databases, the downward trend appeared to continue to 2009, with the rate falling slightly below 5 percent. Here, the poverty rate for individuals is below 6 percent in 2015 and below 5 percent by 2018.

Table 3: Counting the Income Poor (using CIS) by Household Type, 2015 and 2018

2015

By Household Type	Number of Poor Households	Percentage of Poor Households
Single male (non-elderly)	508,873	26.36
Single female (non-elderly)	455,430	23.59
Non-elderly couple with no children	220,296	11.41
Non-elderly couple with children	316,950	16.42
Female lone-parent household	153,978	7.98
Male lone-parent household	10,137	0.53

2018

By Household Type	Number of Poor Households	Percentage of Poor Households
Single male (non-elderly)	482,978	31.44
Single female (non-elderly)	362,393	23.59
Non-elderly couple with no children	147,343	9.59
Non-elderly couple with children	230,311	14.99
Female lone-parent household	90,106	5.87
Male lone-parent household	10,527	0.69

Source: Statistics Canada, Canadian Income Survey microdata files, 2015 and 2018; and calculations by the author.

Food (in)security

The CIS (2018) survey asks households if they have experienced any food insecurity over the past year. Given that a large segment of the poor live on reported incomes that are well below the basic needs threshold, it would not be surprising to find that most households below that line would be food insecure. However, the results were quite the opposite. Fully 67 percent of those living in poverty declared that they were "food secure" and only 12.5 percent of the poor indicated that they were severely food insecure.

Survey of Household Spending (SHS)

Prior to 1997, Statistics Canada collected and published information about household expenditures (as well as income) using the Family Expenditure Survey (FAMEX). This author has used the FAMEX microdata in previous research to estimate both income and consumption poverty. Beginning in 1997, Statistics Canada replaced the FAMEX with the Survey of Household Spending (SHS) and again allowed the public use microdata files (PUMF) to be available to researchers. After 2009, however, government budget cuts apparently resulted in the suspension of the SHS. Currently, the SHS is conducted every two years. According to Statistics Canada, PUMFs were produced on an annual basis for SHS 1997 to 2009, before a redesigned survey was introduced with the 2010 reference year. The SHS 2017 PUMF is the first SHS PUMF based on data collected after the 2010 survey redesign.

> Due to changes to data collection, processing and estimation methods introduced with the 2010 redesign, users are advised not to compare data from SHS 1997 to 2009 with data from any subsequent years, unless otherwise noted. (Statistics Canada, 2022c)

This paper uses the 2017 and 2019 SHS public use microdata files and, observing the caveat in the above quotation, makes only broad references to early SHS data points and trends.

The SHS databases provide students of poverty with a much richer and more detailed array of information than the CIS. In addition to full data on incomes, taxes, and key demographics, the files provide details on household facilities and on current household expenditures. For the poverty researcher, this opens the door to valuable comparisons and insights. So, we begin with the SHS2017 file and estimate income poverty. Table 4 displays the results of these calculations.

Survey of Household Spending for 2017

Keeping in mind the Statistics Canada caution about comparability of SHS data after 2009 and all of the previously expressed concerns about data reliability, it is nonetheless fair to say that these results for basic needs poverty are roughly in line with expectations. The fact that these poverty rates are in the same range as those derived from the CIS database (in

Table 4: Income Poverty using SHS 2017

2017 Poverty line = $13,863	Using After-tax Income
Number of poor households	896,475
Poverty rate (%)	**6.20**
Number of poor individuals	1,552,219
Poverty rate (%)	**4.64**

Source: Statistics Canada, SHS2017 (Interview file); PUMF; and calculations by the author.

around the same period of time) is a confirmation that the two databases are at least reasonably consistent in gathering income information.[17]

To the extent that this database fairly reflects the reality of Canadian households in 2017, we find that about 4.6 percent of our fellow citizens have reported after-tax incomes that fall below the basic needs poverty line. However, we should not celebrate these comparatively low numbers. It is sad that we have hundreds of thousands of fellow human beings that are still apparently living in poverty at this time in our history. We should be asking why that many people are poor. It certainly wasn't due to a poor economy. In 2017 and 2018 the unemployment rate was in the range of 6 percent, close to a 30-year low.

Survey of Household Spending for 2019

The SHS2019 database is the most recent microdata file (PUMF) that the author was able to acquire. Given its relative currency and the importance of consumption information to the study of poverty, this database provides much more detail about the poor and their comparison to the non-poor. We begin with an estimation of both income and consumption poverty. Both sets of estimates use equivilized values of (after-tax) income and consumption. Table 5 displays those results.

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[17] One troublesome inconsistency between the two surveys is the number of households counted. The CIS2015 counts 15.2 million; the CIS2018 counts 15.8 million; the SHS2017 counts 14.5 million and the SHS2019 counts 14.7 million. This is hardly a marginal discrepancy and it is uncertain what effect this difference in coverage has on the poverty estimates.

Table 5: Income and Consumption Poverty Estimates Using SHS2019

2019 Poverty line = $14,458	Using After-tax Income	Using Consumption
Number of poor households	796,265	527,561
Poverty rate (%)	**5.41**	**3.58**
Number of poor individuals	1,384,615	841,204
Poverty rate (%)	**4.05**	**2.46**

Source: Statistics Canada, SHS2019 PUMF; and calculations by the author.

The results for (equivilized) after-tax incomes are slightly lower than was the case in 2017 but still broadly in the same low range. Again, it appears that we are getting fairly consistent results across two different surveys and in two different years (2018 and 2019). And, to the extent that this data tells us anything, it seems that basic needs poverty is at or near all-time lows based on both CIS and SHS survey information.

The discrepancy between income and consumption poverty rates requires some explanation. If 1.38 million people have insufficient after-tax income to afford their basic needs, how is it that many fewer (about 40 percent less) are consuming below the basic needs threshold? First, the "consumption poor" are not necessarily the same households as the "income poor." However, more to the point, those who are income poor may have ways to expand their consumption possibilities beyond their available reported income. They can use savings if they have any, they can borrow, sell assets, earn off-the-books money, or they can receive gifts (which are not counted as income)—either monetary or in-kind.[18] A good example would be university students living alone or with friends in apartments. Their earnings would likely be insufficient to cover tuition and living expenses but student loans (also not counted as income) and gifts from parents (not counted) may push them over the poverty line in terms of their consumption.

A further calculation on the same database reveals that only 1.36 percent of Canadian households were *both* income and consumption poor in 2019 using the basic needs threshold and only 0.86 percent of Canadian individuals were living in both income and consumption poverty. In other

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[18] In-kind gifts do not, of course, increase consumption spending but effectively reduce your personal poverty line. A rent subsidy, for example, allows people to have a higher standard of living beyond what their income would afford.

words, less than one percent of the Canadian population had, at the same time, both insufficient income for basic needs and a consumption level that was below the basic needs threshold.

The following tables and charts provide a more complete characterization of *income* poor households based on the information in the SHS2019 database.

In Canada, in 2019, by far the largest share of the poor (61 percent) were single people living alone (table 6 and figure 2). Fifty-seven percent of those were males. This group, singles, also has the highest poverty rate.

Table 6: Type of Household of those Considered to be Income Poor, 2019

Category	Number of Poor Households	Poverty Rate (%)	Share of the Poor (%)
Single person living alone	485,298	**11.18**	60.95
Couple with no children	72,058	**1.85**	9.05
Couple with children	129,994	**3.31**	16.33
Single-parent family	42,952	**5.59**	5.39
Other	65,963		8.28
Total number of poor households	796,265		100.00

Source: Statistics Canada, SHS2019 PUMF; and calculations by the author.

Figure 2: Composition of Poor Households, 2019
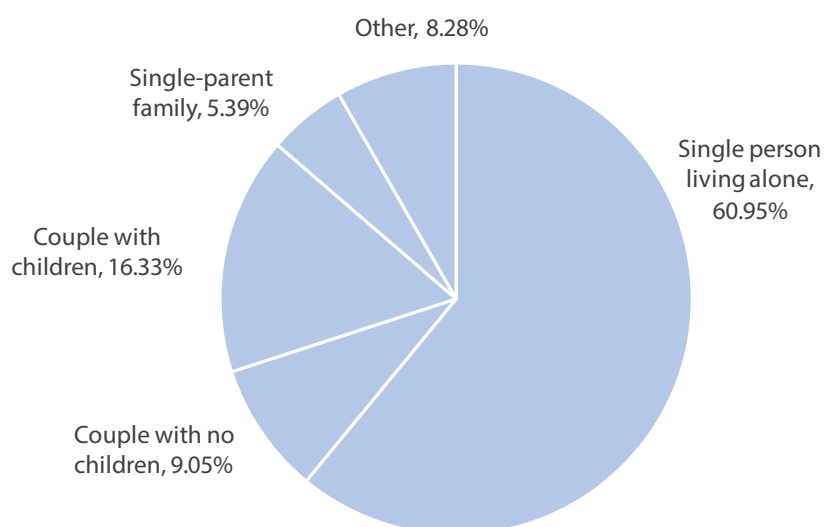
Source: Table 6.

This confirms the results found with the CIS database and is a remarkable change in the composition of the poor in just over two decades. In 1996, single-parent families were the face of poverty. Now, in 2019, single unattached individuals (disproportionately men) dominate as the new face of poverty. In 1996, single-parent families had a poverty rate of 28 percent. In 2019, their poverty rate was exactly one fifth of that. Nevertheless, the number of single-parent families continues to rise slowly, but that is due entirely to the increase in single-father families (Statistics Canada, 2015; 2017a, August 2).

Younger households, those whose reference person is under 30 years old, have by far the highest rate of poverty (see table 7). This age group make up about 9.4 percent of Canadian households but accounts for triple that proportion of poor households. Older households, on the other hand, have very low poverty rates. Households whose reference person is 65 or older make up less than 10 percent of the poor yet comprise more than a quarter of all households. It would be fair to say that poverty rates and age are, roughly, inversely related.

Table 7: Age Groupings of Poor Households (Reference Person), 2019

Age Grouping	Number of Poor Households	Poverty Rate (%)	Share of the Poor (%)	Share of the population (%)
Younger than 30	227,304	**16.35**	28.55	9.44
30–39	129,891	**4.82**	16.31	18.30
40–54	163,312	**4.27**	20.51	25.98
55–64	199,999	**6.49**	25.12	20.93
65–74	62,122	**2.92**	7.80	14.46
75 and over	13,636	**0.85**	1.71	10.90
Total number of poor households	796,264		100.00	

Source: Statistics Canada, SHS2019 PUMF; and calculations by the author.

By 2019, the poverty rate for households whose reference person has a high school education or less was somewhat higher than those with other levels of educational attainment (see table 8). This is not surprising. The inverse relationship between the number of years of education and poverty rates (and unemployment rates) is well established. Folks with a high school education or less normally qualify for lower paying jobs with less job security. Over time, more and more jobs require higher level

Table 8: Education Profile of Poor Families (SHS2019)

Education Level of Reference Person	Number of Poor Households	Poverty Rate (%)	Share of the Poor (%)
Less than high school	130,333	**7.54**	16.45
High school diploma or equivalent	237,182	**7.97**	29.94
Trade school, college, etc.	187,632	**3.86**	23.69
University diploma or degree	236,973	**4.67**	29.92
Total number of poor households	792,120		100.00

Source: Statistics Canada, SHS2019 PUMF; and calculations by the author.

technical or intellectual skills and people who don't possess those skills are increasingly redundant. Low education levels may also be related to some personal characteristics that are not desirable in the job market (like truancy, short attention span, difficulty getting along with people, and a lack of perseverance). The reverse is likely to be true for those with the most years of education.

The comparatively high poverty rates of those households whose reference person has a university degree or diploma requires some explanation. We would usually expect that this category would have the lowest poverty rate but the results suggest otherwise. Something else is going on here. Consider two possible explanations for this higher poverty rate. First, by 2019, some university graduates (especially in the humanities and some social sciences) had difficulty finding their way in a labour market that was increasingly favouring STEM graduates. This may have delayed for some period the acquisition of employment and consequently they would report having low incomes. Second, and somewhat related to the first point, some of those with university degrees are still in school pursuing a second degree or higher level education (for example, a masters or doctorate). This could help explain why they have degrees but also have a low income. The spending patterns of the poor provide some support for this last explanation.[19]

It would certainly not be a surprise that the vast majority of poor households are renters (table 9 and figure 3). Purchasing a home is a big undertaking and a significant expense. Most poor households would unlikely be in a position to take on the expenses involved. In addition, poor households are disproportionately young and this, by itself, makes

[19] As table 11 shows, spending on "Education services" by the poor is fully double that of the non-poor. This suggests that some of the poor are in the process of acquiring more education and that, at least partially, explains their poverty.

Table 9: Type of Living Accommodation of the Poor (SHS2019)

Tenure (Type of Housing)	Number of Poor Households	Poverty Rate (%)	Share of the Poor (%)
Owned with a mortgage	87,180	**1.54**	10.95
Owned without a mortgage	127,468	**3.01**	16.01
Rented	581,617	**12.01**	73.04
Total number of poor households	796,265		100.00

Source: Statistics Canada, SHS2019 PUMF and calculations by the author.

Figure 3: Type of Accommodation for Poor Households, 2019
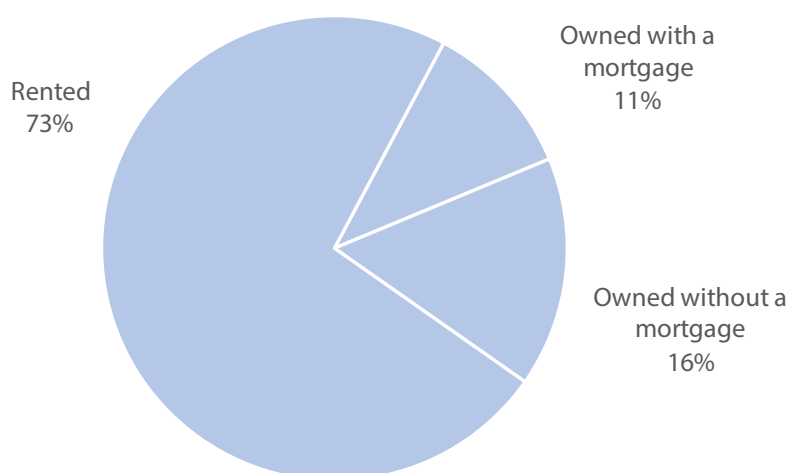
Source: Table 9.

it understandable that renting accommodation is often the only feasible option for them.

Next, we examine the ownership by the poor of key items that have come to be associated with "inclusion" or being "mainstream" in modern societies. We try to answer the question, using data from the SHS2019, the extent to which poor households are falling behind the mainstream in having access to these highly valued items or services.

Based on the data from the 2019 Survey of Household Spending, it seems that households that are below the basic needs threshold are not too far removed from the mainstream. The big difference in owner-

ship between the poor and non-poor is of a vehicle and there the expense would be the biggest barrier for ownership. Even so, more than 50 percent of poor households own a vehicle. Most poor households are connected to friends, relatives, information, entertainment, and mainstream society via their ownership of electronic devices and services (see table 10).

Before we examine the average spending of different household types, it is important to understand that poor households are smaller than non-poor households. In fact, based on the data from the SHS2019 survey, the average size of a household whose reported income is below the basic needs threshold is 1.74. The average size of a non-poor household is 2.35. The ratio of poor-to-non-poor household size is .74. For obvious reasons this size differential matters when we consider spending differences.

Table 10: Ownership of Items Connecting People to the Mainstream, 2019

Key Item or Service	Owned by Poor Households (%)	Owned by Non-Poor Households (%)
Percent of households with at least 1 cellphone	83.55	92.71
Percent of households with at least 1 computer	72.39	85.44
Percent of households with internet service	86.65	92.21
Percent of households with at least 1 vehicle	53.07	87.56

Source: Statistics Canada, SHS2019 PUMF; and calculations by the author.

Ratios in the range of .7 or above mean that spending by the poor is roughly comparable to that of the non-poor. Ratios below .7 tell us the extent to which spending by the non-poor is higher than spending by the poor. This comparison is useful in the study of poverty because it helps identify those areas in which spending by the poor is sharply different from the mainstream. Of particular note is the spending on education services. The poor are spending far more than the non-poor here and a likely explanation is that a substantial number of poor households are still students investing in their human capital (table 11). Also noteworthy is the spending on food and shelter. These could be fairly classified as the most important necessities. If we combine food and rent for renters, we would get a weighted ratio of close to .7, which is approximately the threshold for comparability. This comparison looks just at expenditures and averages and does not consider other potentially relevant factors.

Table 11: Average Spending of Poor and Non-Poor Households (SHS2019)

Item or Service	Poor Households ($)	Non-Poor Households ($)	Ratio (Poor/ Non-poor)
Cell phone services	915.24	1,340.37	0.68
Internet services	609.80	741.40	0.82
Online services	92.34	135.45	0.68
Education services	3,247.09	1,612.51	2.01
Food (overall)	6,462.35	10,542.42	0.61
Food at stores	4,851.61	7,696.37	0.63
Food at restaurants	1,610.74	2,846.05	0.57
Health care (out-of-pocket costs)	1,052.67	2,909.71	0.36
Personal care	792.21	1,393.25	0.57
Home entertainment and equipment	131.15	214.60	0.61
Shelter	13,010.69	20,109.44	0.65
Rent	7,485.03	3,818.91	1.96
Rent for renters (includes just people who rent accommodation)	10,247.41	12,487.23	0.82
Games of chance	41.18	186.13	0.22
Alcohol, tobacco, and cannabis	1,283.12	1,757.40	0.73
Overall consumption	41,264.77	69,842.84	0.59
Overall expenditures	42,133.12	93,894.59	0.45
Income taxes	83.32	15,973.41	0.01

Source: Statistics Canada, SHS2019 PUMF; and calculations by the author.

The differential with out-of-pocket expenses on health care might initially be a concern. However, again, we are reminded that the poor are disproportionately young and that group typically will not incur extra health care expenses to the same extent as those middle-aged and older. By the same token, the comparable spending between poor and non-poor households in the alcohol, tobacco, and cannabis category might have an "age" explanation as well. Tobacco use has fallen dramatically over the years and currently does not have a strong age pattern. However, alcohol and cannabis do have a distinct age pattern—younger people consume both disproportionately and the use of both tends to decline with age (University of Waterloo, School of Public Health Sciences, Undated; Statista, 2022a; 2022b; Statistics Canada, 2022d).

Employment status of the poor

It is important to know whether or not the poor are generally engaged with the labour market. The term "working poor" has been used in various contexts over the years, so the question is certainly valid. Unfortunately, the SHS2019 file contains no reference to employment status, whether full-time, or part-time, or neither. The SHS2017 file does have that information, so we use it here with the proviso that it is not right up to date and that there are some (likely unrelated) issues with the SHS2017 file (interview version) as the Appendix: Data Anomalies explains.

The results drawn from the SHS2017 database reveals that most poor households do not have a full-time worker—or even a part-time worker (table 12). In a separate calculation on the same database, the author found that 511,417 poor households (57 percent of all poor households) have neither a full-time nor part-time employed person in the household. Further, another 218,998 poor households (or 24 percent) have no full-time and only one part-time worker. So, overall, it is fair to say that poor households have a weak attachment to the labour force. Clearly, there are some explanations for this. In some cases, such as single-parent households or disabled households, the reference person is not expected (or is unable) to work and receives transfers. Other cases may be retired persons who somehow have incomes below the poverty line.[20] Still other cases may be students still in school but living on their own, which might account for some of the poor who are weakly attached, or not attached at all, to the labour force. There still remains a large number of poor whose situation is not as easy to explain.

Table 12: Employment Status of the Poor Using SHS2017

Category	Full-time	Part-time
Household has ZERO persons employed	793,266	598,241
Household has ONE person employed	86,994	235,380
Household has TWO or more employed	16,213	62,850
Total:	**896,473**	**896,471**

Source: Statistics Canada, SHS2019 PUMF; and calculations by the author.

[20] It is important to emphasize that government cash benefits for Canadian seniors, excluding Canada Pension (CPP) but including OAS, Spousal, and Supplemental Allowances, would place an eligible senior or a senior couple well above the basic needs poverty line (Canada, 2022b).

The SPSD/M simulation model

The SPSD/M database was designed as a specialized model useful for predicting the likely economic impacts of changes in government policy, such as tax and transfer changes. The basis of the SPSD/M system is the CIS database with some additions from the SHS and the census. It is a large database and analysts can use it to estimate measures of poverty and inequality. However, at the time the research for this paper was undertaken, only one version of the SPSD/M system was available, namely, that for economic families in 2017. Table 13 summarizes the outcome of the estimations using this simulation model.

These estimates fall broadly in line with the estimates from the CIS and SHS databases. So, despite the fact that the different surveys have different purposes and were constructed somewhat differently, it is useful to know that with the one exception that will be discussed in the Appendix: Data Anomalies, they produce similar results. To summarize, the three databases that cover the period 2015 to 2019 show results for income poverty of households in the 5 to 7 percent range and income poverty for individuals in the 4 to 5 percent range. Again, these low values are no cause for celebration. We should be concerned that there is any basic needs poverty at all in Canada.

Table 13: Estimating Basic Needs Poverty (SPSD/M for Economic Families for 2017)

2017 Poverty line = $13,863	Using After-tax Income
Number of poor economic family households	1,110,058
Poverty rate (%)	**6.95**
Number of poor individuals	1,628,890
Poverty rate (%)	**4.50**

Source: Statistics Canada, SPSD/M simulation model; and calculations by the author.

Data issues

No empirical study is complete without some self criticism—specifically, a careful examination of the weaknesses in the data and methodology used. Earlier this essay discussed the Bank of Canada study about underreporting of income. This paper was just the latest in a series of studies showing the potential errors in income data due to underreporting, particularly at the lower end of the distribution. For anyone researching poverty or inequality, this is important. It means that some of the people reporting very low incomes may not actually have low incomes. Using tax returns, as many surveys now do, is hardly going to improve accuracy because tax avoidance is most often the motivation for underreporting. There is no easy way to fix this problem without a more granular, one-on-one examination of a random sample of households that includes access to the full array of resources and expenditures at their disposal. In the meantime, researchers are obligated to reveal the weaknesses in the data and any implications for the object of the study.

In terms of methodology, the approach this study of poverty uses seems to be sound. We began with a definition of poverty and took some care to justify the use of that definition. We pointed to the first essay in this series, which provides additional support for the basic needs view of poverty. We operationalized the definition using a market basket of basic needs and pointed to estimates of the cost of the basket. We discussed—and used—the method for updating the cost of the basic needs basket. The weakest part of the process is, of course, the lack of an up-to-date revised basic needs basket that takes into account changes in the nature and composition of "necessities." This task would be better accomplished by a team of experts in the area including some people who have first-hand experience living in poverty. Finally, and arguably most importantly, we examined the methods for adjusting income for use in the estimations.

The first adjustment deals with the income that is intended to represent a household's available resources to purchase goods and services. This study uses after-tax income. Specifically, we employ here total income minus income taxes as a proxy for disposable income.[21]

The second adjustment we made was "equivilizing" after-tax income so that we could compare different households (of different sizes) with

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[21] Indeed, one could argue that, at least for employees, there may be other deductions from income that are nondiscretionary and that serve to reduce a household's "disposable" income. However, some of the databases that this study uses do not have sufficient information to be able to determine all of these deductions. So, this study uses after-tax income, which has been pretty standard as a proxy for available resources in most studies of poverty.

each other. Rather than having different poverty lines for households with different numbers of individuals, we use an equivalence scale to adjust each household's income in a way that accounts for household size. The equivalence scale this study uses is the square-root scale and is relatively common in studies of poverty and inequality.[22] While the square root scale does not obviously offend common-sense notions of economies in living, there are circumstances in which it could be viewed as too high. For example, a one-bedroom apartment and all of its furnishings and appliances could be suitable for one person, but also for two adult individuals in a relationship with very little adjustment needed. Since rent is the largest single expense for lower income households by far, and since 70 percent of poor households have either one or two adults, the 41.4 percent adjustment for households of 2 persons could be viewed as excessive in some cases. It is certainly worth investigating whether this scale is appropriate in poverty studies and whether another scale might be better suited.[23]

There are additional concerns about the published data drawn from the Statistics Canada surveys. These additional concerns are important but are relatively technical in nature and so are confined to the Appendix: Data Anomalies at the end of this essay.

Conclusion

To the extent that "facts" represent evidence from credible sources that can nevertheless be disputed and challenged, this essay is filled with facts. Understanding that the data is not perfect and that no measure, including the basic needs poverty line, is perfect, we have tentatively proceeded to shed some light on the problem of poverty in Canada at this time in our history.

Clearly there are people suffering from insufficiency of basic needs in Canada. This essay has aimed to try to empirically determine how many households and how many individuals are in that predicament. Secondarily, the essay aims to use data to try to explain the patterns and differences that the data reveals. What we find when we use the leading data sources to do our empirical work is that the patterns and differences in the prevalence of poverty provide a deeper insight into the nature of the problem.

Most of what this essay reveals is, in fact, not surprising. That poverty is inversely related to age and education level is expected and well

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[22] For example, the Luxembourg Income Study group uses the square root equivalence scale in comparing the inequality indicators across many countries as does the newly anointed official poverty measure in Canada, the MBM.

[23] Sarlo (2013: 16-18) contains more discussion of concerns with this equivalence scale.

established in the literature. That the vast majority of poor households are renters is, again, no surprise and is related both to age and income. That the majority of poor adults have little connection to the labour market is also not a surprise. Even a full-time minimum wage job will pull households of up to three persons out of basic needs poverty. However, the data did reveal a number of interesting and surprising results that are worth reviewing.

The apparent decline in poverty rates to an all-time low requires some comment. While this essay does not present the longer term trend in poverty rates (due largely to changes in databases and lack of compatibility), the evidence that we present does suggest that poverty has declined over the past decade or more. The explanation for that decline could potentially be found in several places. First, the number of Canadians employed increased steadily from 2013 to 2020 and peaked in January 2020 just before the pandemic response hit. The number of unemployed correspondingly declined over the period. Second, as the baby boom generation ages, an increasing number of households are hitting the threshold for receiving government benefits (old age security and supplementary benefits). Thus, many more older, poor households are likely to qualify for benefits that might push them over the poverty line. Finally, for younger households, the enhancements in child benefits after 2015 might also have helped to bump some poor households above the line. These are suggested causal factors and remain speculative without a more targeted empirical study.

That fully two-thirds of people whose incomes were below the basic needs threshold answered that they were "food secure" was an unexpected revelation. Over the years, stories about the poor in the mainstream media frequently speak about hunger and about having to make difficult choices between "paying the rent or feeding the kids." No doubt there are those cases but, at least from the CIS survey, most of the households at the very bottom of the income distribution, those living in basic needs poverty, report that they are food secure.

Perhaps the biggest surprise the data reveals is that the character of poverty has fundamentally changed over the past few decades. Where once single-parent families were the dominant face of poverty, now it is single individuals (mainly males) living on their own. This is not to say that single parenthood no longer presents a challenge in terms of deprivation and the prospects for children but the data does suggest that single people, especially the young, now potentially represent a bigger challenge. To the extent that some of those poor single persons are getting assistance from parents or from student loans, as the data suggests, then part of the problem is less urgent. However, to the extent that many poor single individuals are essentially stuck in their predicament almost permanently (due to addiction, mental illness, estrangement from the labour market,

or other issues) then the problem is more profound and urgent. But we won't know any more about the nature and extent of the poverty of single individuals without a deeper dive into that situation—something that the existing data will not allow. I will reiterate a point made frequently in this essay series: Survey data alone will not reveal the true extent and nature of poverty. Only a more intense, in-person examination of households and their detailed situation will provide the kind of information necessary to understand poverty.

It appears that the poor, as measured by basic needs deprivation, are not as "excluded" from the mainstream as some might think. If we look at the proportion who own cell phones and computers across Canada, there does not seem to be a huge divide between the poor and non-poor. Access to the internet appears to be broadly similar with both poor and non-poor households exceeding 85 percent connectivity. In terms of the core basics, the combined food and shelter costs (if we compare rents for renters on a fair basis) are actually in the same range for poor and non-poor households alike when adjusted for household size. This finding was a surprise to this observer given the wide differences in the quality of different rental accommodation and the fact that "food" includes food from restaurants. Again, this calls into question some of the concerns about "exclusion." However, without a much closer look, we really won't know for sure.

It is important to remember that these Statistics Canada databases do not cover homeless people and only sparsely cover people living on reservations. These are important omissions when it comes to the study of poverty. By the same token, it seems clear that there is underreporting of income at the low end of the distribution that is not trivial and is also a real concern. Where all of this nets out is uncertain. It is important that poverty researchers be humble when discussing empirical results. The prevailing data simply do not allow for clear and unambiguous statements of "facts." What we do have is some interesting and informative evidence that is only tentative. That may be the best we can do given what we have to work with.

Appendix: Data Anomalies

1. SHS2017—Concerns with Consumption Data

With the Survey of Household Spending (SHS), Statistics Canada draws its information from a random sample of Canadian households by interviewing all respondents and asking a subset of the interviewees to create a diary of their spending. In 2017, Statistics Canada decided to produce two databases, each of which was edited (including imputations) and the data anonymized to ensure confidentiality. Two separate PUMF databases were published—the Diary microdata file and the Interview microdata file—each with its own set of weights on the records. The weight on each record represents the number of Canadian households that the record represents. The Diary file is smaller because only a subset of interviewed respondents created the diary. It has 4,012 records and has greater detail in its variables. The larger Interview file has 12,492 records but less detail.

Since Statistics Canada provided no further guidance as to which file to use for which purpose, this author decided that the Diary file would be most appropriate since a) those who completed the diaries also did the full interview, and b) the Diary file had more detail about the specific goods and services purchased or owned. Table A1 displays the estimations of income and consumption poverty using the Diary file.

Next, because these results seemed to be somewhat lower than expected and because I had another file available (the Interview microdata file) for the same year produced by the same team, I decided to use the Interview file as a test of the consistency of the 2017 data. Table A2 shows the results using the Interview file.

While the results using after-tax income are a bit higher with the interview file, they are actually more in line with expectations based on the other results we have with both CIS and SHS surveys. However, the results for consumption poverty are strikingly out of line with expectations. Compared to the consumption results in table A1, these numbers are higher by a factor of five. These results were so bizarre they warranted a double (and then a triple) check using different software. The results have been verified.

Our expectation is that consumption poverty will be lower than income poverty. There are many reasons for very low reported incomes, namely, small business losses, people still in school (training, college, university, etc.), and underreporting of income. However, there are not many reasons for low consumption. Everyone has to pay rent, buy food, and make a range of purchases that define their standard of living. This expectation (that consumption poverty is lower than income poverty) flows from the famous lifecycle hypothesis in economics and is confirmed empirically

Table A1: Income and Consumption Poverty Estimates using SHS2017 (Diary file)

2017 Poverty line = $13,863	Using After-tax Income	Using Consumption
Number of poor households	755,579	438,116
Poverty Rate	**5.22**	**3.03**
Number of poor individuals	1,309,651	643,121
Poverty rate (%)	**3.90**	**1.92**

Source: Statistics Canada, SHS2017 PUMF (Diary); and calculations by the author.

Table A1: Income and Consumption Poverty Estimates using SHS2017 (Interview file)

2017 Poverty line = $13,863	Using After-tax Income	Using Consumption
Number of poor households	896,472	2,142,260
Poverty Rate	**6.20**	**14.81**
Number of poor individuals	1,552,219	3,857,276
Poverty rate (%)	**4.64**	**11.52**

Source: Statistics Canada, SHS2017 PUMF (Diary); and calculations by the author.

in previous research this author has published (see Sarlo, 2001: 35-46 and Sarlo, 2013: 22).[24]

In 2019, Statistics Canada produced a single SHS microdata file and the poverty results again confirm expectations based on the abundance of past research. That the 2017 SHS Interview file is inordinately "bottom heavy" for consumption is inexplicable. After all of the editing and data checking that is done prior to publication, it is noteworthy when something this anomalous slips through. What it does suggest is that researchers cannot use data from reliable sources without doing their own checks. Despite the best efforts of our statistics agencies, the data that we use in our research is not perfect.

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[24] Similarly, consumption inequality is expected to be lower than income inequality and this author has confirmed that as well (see Sarlo, 2016: 15-17).

2. Concerns with income and consumption data in general

As someone who has worked with microdata files for more than three decades, I have a profound appreciation for the information that they provide and for the secrets they unlock. Nevertheless, it is important that researchers approach these data files with the same healthy scepticism that they would have for any other kind of information.

Income data

The bottom end of any income or consumption distribution (drawn from a microdata file) will fascinate and puzzle new researchers. For example, when you sort the incomes (usually after-tax incomes) in a data file, you find quite a number of records representing thousands of households with negative incomes. For example, the Canadian Income Survey 2018 microdata file, which produces income data for Canadian individuals, has 60,800 records with negative incomes (equivilized after-tax incomes). The explanation is that almost all of these individuals have business losses that outweigh any other income resulting in the negative value. These individuals, representing about 4 percent of the income poor, give the appearance of being the poorest of the poor. It is an open question as to whether these business-owning persons are poor at all.

There were another 427,418 records (representing 28 percent of Canada's poor using the CIS2018 file) with equivilized incomes between $0 and $5,000. It is difficult to understand annual incomes this low. Canada's last resort social assistance programs provide substantially more than $5,000, even for single employable persons (Maytree, 2021). It is the case that the major source of income for 59 percent of poor persons is government transfers, so, using the CIS2018 data file, it would appear that there is substantial underreporting there. Programs for Canada's seniors provide benefits that exceed the basic needs poverty line. So, we are left with a few options: 1) Some poor individuals could be supported by one or more well-off households with gifts of cash or in-kind gifts. This kind of voluntary redistribution has always been a part of our society; 2) Some people living below the basic needs poverty threshold could be choosing to live "off the grid" or adopting some kind of ascetic/sustainable lifestyle by choice or necessity; 3) Some could be business owners with losses against other income which results in a very low reported income.[25] This is the

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[25] A search of the CIS2018 database finds that only 8.87 percent of poor persons' major source of income was from self-employment and a further 6.1 percent came from investment income.

same reason why some households have negative income; 4) Some households could be underreporting their income.

Consumption data

Information on the consumption of Canadian households comes from the Survey of Household Spending. We use the latest SHS microdata file, 2019, for this analysis. According to that database, there were a total of 527,561 households (or 3.6 percent of all households) whose reported equivilized consumption was below the basic needs poverty threshold of $14,458. However, not all of these poor households had poverty-level incomes. Normally, we would expect that the reason a household cannot buy all of the necessities it needs is because it has insufficient income. In fact, the great majority of these consumption-poor households, fully 62 percent, had equivilized after-tax incomes above the poverty line. Even more surprising is the fact that more than 18 percent of households that reported below-poverty equivilized consumption had reported equivilized incomes that were more than double the poverty threshold.

Some cases defy any kind of obvious explanation, specifically:Almost 11,000 individuals with average after-tax incomes of over $40,000 had consumption levels of less than $9,500—just two-thirds of the basic needs poverty threshold. Another 3,949 households of three persons with after-tax incomes of just over $99,000 (which is $49,680 on an equivilized basis) had total equivilized household consumption of just $12,459. And another 760 households of three persons with after-tax incomes of between $116,500 and $150,000 had equivilized consumption levels more than $1,000 below the poverty level.

On the surface, it seems that in these cases—and indeed in most cases where consumption is below the poverty level—consumption must be underreported unless there are substantial in-kind gifts or unless people are living "off the grid." There does not appear to be an obvious reason to underreport consumption. It would be good to hear from the Statistics Canada analysts who might be able to shed light on these and related mysteries.

3. An issue with the CIS databases

It is common with Statistics Canada databases that every record represents a household and is assigned a weight. That weight tells us the number of households in Canada represented by that record. So, the sum of the weights should be approximately equal to the total number of households in the nation. However, that does not happen with the CIS databases.

The size of the household (number of persons) is already imbedded in the weight so that the sum of the weights in the CIS database is equal to the entire Canadian population, approximately. This is a departure from many other databases, past and present, and is potentially confusing for researchers. It seems to this researcher that the CIS database would be more interesting and useful if it presented the data on the basis of households, perhaps in addition to the person file.

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