# How Do Some Lower-Income Canadians Pay

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# Acknowledgements

# Abstract

Previous research suggests that lower-income Canadians may have unique experiences with the use of payments, including the use of cash and digital payments. We conduct a case study using data from the Canadian Financial Diaries (CFD) project to gain insight into how some lower-income Canadians pay. The CFD uses a mixed methods design for financial diaries that combines qualitative and quantitative components to understand the strengths and weaknesses of the finances of 47 Canadians with lower income. We find that diarists use their bank account to facilitate a variety of associated payments; that payment use is habitual; and that the number of monthly transactions can vary widely, both for individual diarists and between [them/diarists]. We conclude with a static analysis that suggests lower-income Canadians who make a lot of transactions during the month could pay lower monthly fees overall if they used an account package with a higher monthly fee.

*Research themes: Money and payments - Cash and bank notes; Money and payments – Retail payments*
*JEL codes: D83; E41*

# Résumé

Des études antérieures semblent révéler des particularités dans l'utilisation des modes de paiement par les personnes à faible revenu au Canada, notamment l'argent comptant et les paiements numériques. Nous menons une étude de cas à partir de données du projet *Canadian Financial Diaries* afin de mieux comprendre les habitudes de paiement d'un échantillon de cette population. Ce projet repose sur une méthode mixte, combinant approche qualitative et approche quantitative, qui est appliquée à des carnets financiers tenus par 47 Canadiennes et Canadiens à faible revenu pour faire ressortir les points forts et les points faibles de leur gestion financière. Nous constatons que les autrices et auteurs de ces carnets utilisent leur compte bancaire pour effectuer divers types de paiements; que leur utilisation des modes de paiement est ancrée dans leurs habitudes; et que le nombre d'opérations mensuelles peut varier considérablement pour une même personne ou d'une personne à l'autre. Nous concluons par une analyse statique montrant que les Canadiennes et Canadiens à faible revenu qui effectuent un grand nombre d'opérations par mois pourraient, en définitive, réaliser des économies en passant à un forfait bancaire mensuel plus coûteux, mais mieux adapté à leurs besoins.

*Sujets : Argent et paiements – Argent comptant (billets de banque) ; Argent et paiements – Paiements de détail*
*Codes JEL : D83; E41*

# 1. Introduction and motivation

Many central banks around the world have been researching a central bank digital currency (CBDC) (Di Iorio, Kosse and Mattei 2024). The Bank of Canada has also been conducting this research as part of its mandate to design, issue and distribute currency and to be able to provide a CBDC should the need arise. However, the Bank is scaling down its work on a CBDC (Macklem 2024) and shifting its focus to research and policy for the broader payments system. It continues to monitor payment methods, such as cash, credit, debit and emerging forms of payment.

As noted by the Bank for International Settlements (2021), "CBDC adoption will likely be driven by its future usefulness to users and acceptance by merchants." Previous work by the Bank of Canada suggests that some Canadians may have preferences or constraints that affect their access to and use of existing payment methods, particularly if cash ever ceased to be used as a widely accepted means of payment (Henry et al. 2023; Warren et al. 2024).[1]

Most Canadians are relatively well served in their access to digital payments, such as debit cards, credit cards and Interac e-Transfer.® However, some groups, such as low-income individuals, can face important challenges or barriers to accessing and using existing electronic means of payments.

Among the strongest predictors of banking status is income, with lower-income Canadians more likely to be unbanked or underbanked (Boel and Zimmerman 2022; Federal Deposit Insurance Corporation 2024) or financially excluded, when compared with either higher-income people (Greene et al. 2024; Shy 2020) or lower-income people in comparable countries (see, e.g., Buckland, Daniels and Godinho (2020) comparing financial well-being in Canada and Australia).[2] About 2% of Canadian adults report they don't have a bank account and therefore cannot make debit card payments or Interac e-Transfers, while around 10% do not have a credit card (Henry, Shimoda and Rusu 2024). Henry et al. (2023) find that cash-only respondents were twice as likely as the general population to not have access to a bank account. Other research examining people with low income also finds that they are more likely to be without a bank account, be without financial services beyond a bank account or have poor internet connectivity (due to a lack of either hardware or an internet connection) (Simpson and Buckland 2009; Hayashi 2016). Lower-income Canadians are also less likely to be internet users and, compared with higher-income Canadians, are less likely to do online banking if they are internet users

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[1] In 2023, cash was used for about one in five payments in Canada, according to Henry, Rusu and Shimoda (2024). Engert and Huynh (2022) assess the potential for a cashless society in Canada, finding "there is little imminent risk that the use of bank notes will decline to a point where Canadians no longer have the option of using them for a wide range of transactions."

[2] Using data from various iterations of the US Diary of Consumer Payment Choice, Shy (2020, 293) notes this relationship: "…the percentage of unbanked participants with no cards varies significantly with household income: from 14.7% in the lowest income group down to 0% in the highest income group. On average, the percentage of unbanked participants with no cards is 3.4%."

(Wavrock, Schellenberg and Schimmele 2021). Some rural communities, especially northern communities, may lack broadband internet access (Canadian Radio-television and Telecommunications Commission 2025).

The research cited above suggests that lower-income Canadians may have unique experiences with the use of payments, including cash and digital payments. In this report, we conduct a case study using data from both the Canadian Financial Diaries project (CFD) and the Bank's Methods-of-Payment (MOP) Survey to gain insight into how some lower-income Canadians pay. The CFD project is a mixed-methods research study involving both quantitative and qualitative aspects that track participants' inflows and outflows for a six-month period. Participants enrolled in the project and kept a detailed diary that tracked their daily spending, saving and borrowing, giving us a large number of transactions that complement the smaller transaction diary used in the Bank's MOP Survey. CFD participants were regularly interviewed about their transactions and other matters relating to their financial capability and well-being, adding a qualitative element unavailable with the MOP Survey. Our case study approach complements and expands on previous work by the Bank on Canadians' use and adoption of payment methods (Henry, Shimoda and Rusu 2024; Balutel et al. 2024; Henry et al. 2023; Felt, Welte and Talavera 2024; Li, Usher and Zhu 2024). Case studies are useful for identifying areas of future research, as well as understanding potential policy implications.

The key findings of this report are as follows:

- Diarists in the CFD project used their bank account to facilitate a variety of payments, such as debit card payments, electronic funds transfers (EFT) and cheque payments. All the diarists were banked, had access to a smartphone or computer and did some form of online banking; some had access to credit cards.

- Payment use is often habitual. CFD diarists used a mix of payment methods but tended to use primarily either debit cards or credit cards. Some diarists did not have access to credit cards and relied mostly on debit. The selection and composition of the sample may have influenced the choice of payment methods.

- The number of monthly transactions made by CFD diarists varied widely. While the median number of monthly transactions was 35—a little over 1 transaction per day, in line with results from the MOP Survey—some diarists reported 50 or more transactions per month. Most transactions by volume were at the point of sale. Recurrent payments, such as rent and utilities, were lower in volume but higher in value when compared with retail point-of-sale transactions.

- Because the number of transactions varied widely, both for individual CFD diarists and between them, account fees could vary widely for certain types of accounts, including low-cost or no-cost accounts. Our static analysis suggests that low-income Canadians who make a lot of transactions during the month could benefit from an account package with a higher monthly fee but lower per-transaction costs. While low-cost accounts are more

prevalent among lower-income Canadians than in the overall population, some lower-income Canadians may not be well served by these accounts. For those who prefer to primarily use their credit card for payments, low-cost accounts may make relatively more sense.

The remainder of this report is set out as follows. Section 2 describes data sources and their methodology. Section 3 briefly describes payment trends in Canada and payment habits of lower-income Canadians. The next section, Section 4, discusses the results from the CFD project diaries. Section 5 is a scenario analysis that looks at a variety of account types and the potential fees paid by diarists. Section 6 concludes.

# 2. Data and methodological approach

To conduct our case study, we rely on two primary sources of data: The Bank's MOP Survey and the CFD project. The MOP Survey is a nationally representative survey with a short diary (three-day period), while the CFD focuses on low-to-moderate income participants and uses a long diary (six months).

## i.    Methods-of-Payment Survey

The design, production and distribution of Canadian bank notes is one of the Bank's five core functions. To support this function, the Bank developed the MOP Survey in 2009, to better understand how Canadians use cash and other payment methods. The survey was initially conducted on a four-year cycle from 2009 to 2021, switching to an annual frequency thereafter.

The MOP Survey focuses on consumer payments at the point of sale and consists of two parts. The first is a short survey questionnaire that asks about topics such as cash holdings and ownership of payment methods as well as capturing socio-demographic characteristics. The second part is a payments diary where participants record and provide details about all the retail purchases they make over the course of three days, including how they paid.[3]

From 2009 to 2017, the Bank conducted the MOP Survey using both paper-based and online methods. From 2021 onward, it has conducted the survey exclusively online. The sample is weighted to reflect the Canadian population in key demographics such as age, gender, income and employment status. See Chen, Felt and Henry (2018) for the calibration methodology, and Henry, Shimoda and Zhu (2022); Henry, Rusu and Shimoda (2024); and Henry, Shimoda and Rusu (2024) for its application to the 2021, 2022 and 2023 MOP surveys, respectively.

In this report, we use the MOP Survey as a benchmark for comparing CFD project participants to typical Canadians, along with the subset of lower-income Canadians. While the MOP survey features a large sample—including lower-income Canadians from across the country—the survey diary is only three days in length. This is suitable for measuring average shopping and

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[3] Certain payments, such as recurring payments for rent or utilities, are excluded from the scope of the diary.

payment behaviour but does not allow for a rich understanding of individual payment choices over time. We use the MOP Survey to provide general information on Canadians' payment habits and product ownership, which serves as context for examining the payment methods used by the CFD diarists.

## ii.     Canadian Financial Diaries project

The CFD project involved both quantitative and qualitative aspects with the goal of understanding the financial dynamics of low- and modest-income Canadians.[4] Participants enrolled in the project kept a detailed diary tracking their daily spending, saving and borrowing. In addition, participants were regularly interviewed to understand their transactions and other matters relating to their financial capability and well-being. Finally, each interview involved a set of qualitative questions covering their financial life history, their self-assessment of their financial literacy and their experience with the COVID-19 pandemic. These interviews add context to the "what, when and where" of transactions, which in turn allowed for more understanding of the "how and why."

The CFD project adopted methods used to examine the financial practices of people with lower-to-moderate income in countries such as the United Kingdom (Biosca et al. 2020), the United States (Morduch and Schneider 2017), South Africa (Collins 2008) and other countries. The project started in 2017 with a mini test of those methods and then began Phase 1 (of two) in March 2018. The first phase ran for one year and finished in October 2019. Phase 2 ran from 2021 to early 2023.

For this report, we use data from Phase 2 of the CFD project. A summary and assessment of the research methods is available in Nur and the CFD Team (2023). We summarize some of their relevant information here.

### a.  Recruitment and attrition

CFD project researchers recruited participants primarily through non-profit agencies, such as SEED Winnipeg, Momentum, ACORN and others. A portion were recruited through snowball sampling, wherein one participant recommends others. Most participants lived in Winnipeg and Calgary, with the remainder throughout Canada. Initially, 67 participants were recruited, with 8 participants not beginning the process. A total of 47 participants completed all seven interviews, with the 12 remaining participants completing at least one interview. Of those remaining 12, a group of 5 had enough information to be included in the project. For this report, we analyze the payment transactions of the 47 diarists who completed all seven interviews. A qualitative assessment of the diarists is based on all 52 in the sample.

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[4] The principal investigator for the Canadian Financial Diaries research project is Dr. Jerry Buckland, Canadian Mennonite University (Winnipeg), and its primary funding is through a grant from the Social Sciences and Humanities Research Council.

## b. Financial tracking

Diarists were responsible for tracking their own transactions. Many participants relied on bank account and credit card statements, while some used spreadsheets or other methods. Users who provided bank account and credit card statements were sometimes unable to recall the purposes of cash payments or e-Transfers; sometimes they could not recall the transaction at all. Some diarists also had trouble recalling whether they made cash payments, likely resulting in an underestimate of the number and value of cash payments. In addition, some diarists may have provided incomplete data, especially for transactions they may not want others to know about or when they needed to track multiple accounts.

## c. Interviews

Researchers conducted interviews monthly, primarily via Zoom and telephone. The first was an intake interview in which participants provided demographic information and details about their assets and liabilities. For interviews two through seven, the first part of each collected and reviewed the diarists' transaction history for the last month, while the second part was devoted to qualitative data collection. The qualitative portion of each interview focused on a specific topic, including financial life history, financial and life goals, self-perceptions of financial well-being and financial capability, the impact of the pandemic on their inflows and outflows and barriers and opportunities to improving financial well-being. The qualitative portion of the last interview was devoted to discussing the diarist's experience with the diary process.

## d. Data collection and coding

During interviews diarists were asked about their transaction history, including the purpose of transactions. Interviewers and diarists reviewed the full transaction history (where possible). If needed, the interviewer would request clarification about the transaction (for example, its purpose). Each diarist's transaction history was then recorded in an Excel spreadsheet and was reviewed to ensure accuracy and completeness.

For each transaction, diarists categorized transactions based on the transaction's primary purpose, provided a brief description of the transaction, and recorded the amount of the transaction and method of payment. CFD researchers worked with diarists to promote consistency and completeness. However, one challenge in classifying purchases was that many purchases contained items from multiple categories. Such purchases were classified according to their primary purpose as provided by the diarist.

To obtain estimates of value and volume shares and number of transactions, we filter data so that only outflows remain. Data are cleaned and standardized to align as best as possible with the payment methods and categories of the Bank's MOP Survey. However, due to the nature of the data and method by which the CFD transactions were collected, the results are not directly comparable to the MOP Survey. In addition, some payment types need to be aggregated in a higher-level category. For instance, in the CFD data, it is not possible to see if

a credit card purchase was made using a card with a chip and personal identification number, a contactless card or via a mobile application. Such transactions can only be classified as a credit card purchase, unlike in the MOP Survey, which is structured to capture that information.

## 3. Case study approach and considerations

We adopt a case study approach of examining and reporting on the transactions. Unlike the Bank's MOP Survey, the CFD project involves multiple detailed interviews with participants. These interviews allow participants to provide context that helps explain their financial circumstances and transactions, such as why they chose one payment type over another or how they felt while using it. For this reason, qualitative methods used in the CFD project serve as a useful complement to the more quantitative, structured approach of the MOP Survey and similar surveys.

Similarly, compared with the MOP Survey, the CFD project follows participants for a longer period, allowing us to better examine and understand the unique payment patterns of specific individuals. While the MOP Survey features a three-day diary, which facilitates calculation of national payment shares, it is less well suited to examining individual payment habits. The CFD data allow us to see payment habits over the course of six months. However, because of its lengthy and detailed nature, the methodology itself may have affected how participants used different payment methods, so that they could, for example, more easily track their transactions over the six-month study period. To improve their record keeping, participants may have shifted their payment methods to debit and credit cards, which would make it easier for them to provide transactions records to researchers. Indeed, several diarists provided researchers with their bank statements as their way of meeting their obligations.

A case study approach also responds to concerns about selection bias and sample size. To identify CFD project diarists with low incomes and given the constraints of the pandemic, researchers recruited through community agencies working with lower-income clients and providing financial advice and support (e.g., asset building, micro lending). Consequently, there could be selection bias in the CFD sample that limits generalizability. Because this is a detailed, high-frequency study of diarists' payment habits, the number of participants in the CFD sample is relatively small (47 compared with 2,000 for the MOP Survey). For these reasons, we should exercise caution when analyzing the CFD diarists and generalizing beyond the sample.

## 4. Lower-income Canadians and how they pay

The Government of Canada uses several measures to identify who is low-income, with the Market Basket Measure (MBM) being Canada's official poverty line. "According to the MBM, a family is considered to be in poverty if, given its size and region of residence, it does not have enough income to buy a set of goods and services considered to represent a model, basic standard of living." (Statistics Canada 2022). In 2021, households (excluding those in the Yukon,

Northwest Territories and Nunavut) were considered to be living in poverty if they earned below $40,000 to $52,000, depending on where they lived (Statistics Canada 2024a).

Based on the MBM, approximately 8% of Canadians were considered to be in poverty in 2021, increasing to 10% in 2022 (Statistics Canada 2024b). Certain groups, such as Indigenous Peoples or visible minority populations, are more likely to live in poverty than non-visible minorities (Statistics Canada 2024b).

Consistent with previous papers by the Bank (e.g., Henry, Rusu and Shimoda 2024) and the lower bound on the MBM, we define lower-income households as earning a household income of less than $45,000 annually.

## i.  Context for the case study

In this subsection, we provide context by reviewing the payment habits of lower-income Canadians. We look at how these habits are both different from and similar to those of the average Canadian. At a high level, there are two important considerations. First, in order to use a certain payment method, a consumer must adopt or own it. Adoption can be influenced by both preferences and constraints; see, e.g., Shy (2020) and Huynh et al. (2020). For example, lower-income Canadians could face relatively higher barriers to accessing credit cards than their higher-income counterparts (constraint), whereas some consumers may like using cash due to privacy concerns or an aversion to technology (preferences).[5] Second, conditional on having a portfolio of payment options to choose from, consumers will differ in how they actually use their payment methods, according to a wide range of factors such as cost, security, convenience and merchant acceptance.

## ii.  Payment methods of lower-income Canadians

**Table 1** shows the adoption rates of the three most common payment methods in Canada: cash, debit cards and credit cards. These methods account for more than 90% of all day-to-day purchases.

Overall, the 2023 MOP Survey shows that 80% of Canadians carried some amount of cash on them in their wallet, purse or pockets—cash that could be used to make a purchase. Among those holding cash, the average amount held was $140. To obtain this cash, Canadians visited an automated teller machine (ATM) about two times per month, on average, or once every other week.[6] The share of Canadians visiting an ATM to get cash "in the past week" (as reported in the diaries of the 2023 MOP Survey) was 30%.

Access to debit cards (which are associated with a bank account) is nearly universal. Among adult Canadians, 98% held an average of 1.2 debit cards each in 2023. Most debit card holders

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[5] Regarding preferences versus constraints, see the discussion in Section 2 of Henry et al. (2023) of consumer types who fall outside of the "typical, well-connected" consumer.

[6] Most cash withdrawals in Canada are made through ATMs.

(62%) paid a monthly fee associated with their bank account, but only about two-thirds of those actually paid it in the preceding month. Fees can be waived for various reasons, such as maintaining a minimum balance or having a senior's account.

Credit card adoption is also high in Canada, with almost 90% of Canadians in 2023 reporting ownership of close to two (1.8) cards each, on average. Just under 30% of Canadians revolved on their credit card in the preceding month, meaning that they had a balance owing and did not pay off the entire amount.

**Table 1**: Select results for lower-income Canadians compared with Canadians overall

| | Overall | Lower-income |
|---|---|---|
| **Cash** | | |
| Percentage holding | 80% | 79% |
| Average amount held | $140 | $134 |
| ATM withdrawals in the previous week | 30% | 32% |
| Average ATM withdrawals in the past month | 1.9 | 2.4 |
| Debit cards | | |
| Percentage Owning | 98% | 97% |
| Percentage with a monthly account fee | 62% | 60% |
| Percentage with an account fee of $5 or less | 16% | 22% |
| Percentage who paid account fee | 60% | 71% |
| Number of cards owned | 1.2 | 1.2 |
| Credit cards | | |
| Percentage owning | 89% | 78% |
| Percentage revolving in the previous month | 29% | 36% |
| Number of cards owned | 1.8 | 1.3 |
| Sample size | 3,970 | 1,147 |

Note: This table presents findings from the Methods-of-Payment Survey conducted in Autumn 2023. ATM means automated teller machine. *Revolving* refers to a credit card owner who has a balance owing and does not pay off the entire amount in a given month.

Source: Bank of Canada

Lower-income Canadians exhibited some adoption patterns for cash and cards that differed from those of the overall survey sample. Rates of holding cash in 2023 were similar among lower-income Canadians (at 79%) and overall (80%). However, lower-income Canadians tended to hold slightly less cash on average ($134) but made more trips to the ATM each month (2.4 trips, or 0.5 more withdrawals per month than the survey participants overall).

Regarding debit card ownership, lower-income Canadians were similar to the average Canadian, having an ownership rate of 97%, with 60% having a monthly account fee. However, the lower-income group was more likely [in 2023?] to have paid a monthly account fee in the previous month: 71% paid, compared with 60% overall. The distribution of monthly account

fees among lower-income Canadians was skewed toward low-cost accounts (subject to fees of $5 or less).

Finally, in 2023 lower-income Canadians were less likely to own a credit card (78% versus 89% overall), held fewer credit cards on average (1.3 versus 1.8 overall) and were more likely to have carried a balance (revolved) on their credit card in the past month (36% versus 29% overall).

## iii.    Use of payment methods by lower-income Canadians

**Chart 1** compares the use of cash, debit cards and credit cards of lower-income Canadians with that of the general population. The left panel shows the share of payments made using each method, as reported in the diaries from the 2023 MOP Survey; the right panel shows the share of consumers who made a purchase using each indicated method in the previous week. The vertical, colored bars are estimated based on the lower-income subpopulation, while the black horizontal bars show the estimates for the entire sample—i.e., for the average Canadian.

Both panels show that payments of lower-income Canadians are relatively more cash and debit intensive than those of the average Canadian. Cash was used for 20% of purchases by Canadians overall in 2023, whereas, among lower-income Canadians, cash was used for almost 30% of purchases. Similarly, cash was used by 53% of lower-income Canadians in the past week, versus 49% overall. The low ownership rate of credit cards among lower-income Canadians is associated with lower credit card usage. Credit cards accounted for about a third of purchases by lower-income Canadians, compared with almost half of all purchases in the full sample.

**Chart 1: Use of cash, credit cards and debit cards to make day-to-day purchases**
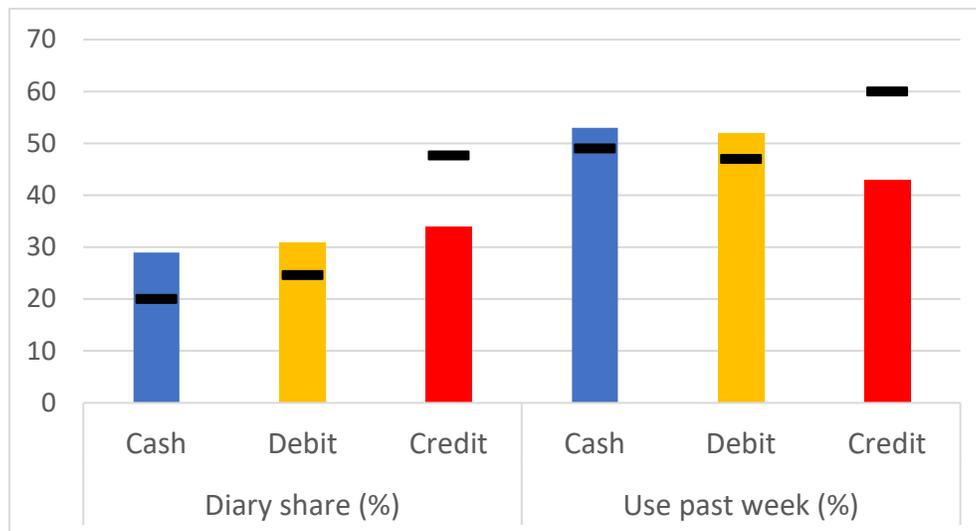


Note: This chart presents the shares of cash, debit and credit payments as well as participants' use of each during the week prior to reporting in the survey diary. Data are from the Methods-of-Payment Survey conducted in Autumn 2023. Black lines indicate the shares of the entire sample, representing Canadians overall, while the bars indicate shares used by lower-income Canadians.

# 5. Case study of the diarists

In this section, we present a case study of the diarists. We first present some basic descriptive statistics from the CFD project diarists. We then look at other transactions by diarists but not captured by the MOP Survey, including average number of monthly transactions and recurrent payments. We finish with a scenario analysis looking at potential bank fees.

## i.      Descriptive statistics of the diarists

Our data consist of 47 diarists who completed a payment diary for all six months of Phase 2 of the CFD project (**Table 2**). In the group, 38 participants were female and 9 were male, while 12 identified as Indigenous, and 30 identified as a visible minority. More than half (27 out of 47) were born in Canada, and 9 had arrived in the country within the five years before the study began (that is, in 2016 or later). The median age of diarists was 39, with a range from 25 to 67 years. Most participants rented their place of residence. Gross household income averaged $32,000 per year, with a minimum of less than $9,000 per year to a maximum of $85,000 per year. Nearly half the diarists reported having a university degree (bachelor's or higher). The average household had 2.8 people (in a range from 1 to 6).

All the diarists in Phase 2 owned a smartphone or a computer. Almost all had internet access at home (the status of one was unknown). All reported using online or mobile banking during the study. Most (41 of 47) reported having a credit card.

**Table 2**: Selected demographic information for the CFD diarists

| Demographics | Number of diarists |
|---|---|
| Full sample | 47 |
| Age | |
| 18–34 | 16 |
| 35–54 | 27 |
| 55+ | 4 |
| Gender | |
| Female | 38 |
| Male | 9 |
| Education | |
| Some high school | 3 |
| High school | 13 |
| Technical or trade school | 3 |
| University | 27 |

| Income | |
|---|---|
| Below $25k | 18 |
| $25k–$45k | 19 |
| Above $45k | 7 |
| Immigration | |
| Born inside Canada | 20 |
| Born outside Canada | 27 |

Note: This table presents demographic information for the diarists in Phase 2 of the Canadian Financial Diaries (CFD) project, which ran from 2021 to early 2023.

Source: CFD project

## ii.     Shares for different payment methods used by the diarists

Diarists made use of a variety of payment methods, including cash, debit, credit, EFT and others. **Table 3** shows the number of payment observations. Debit and credit were the most used payment methods, followed by EFTs (such as pre-authorized debits, online bill payments and e-Transfers). Most retail purchases were made for groceries or drugs, including food, alcohol and prescriptions; meals; entertainment, including subscriptions to streaming services such as Netflix; and durable goods and other household items. One challenge in classifying purchases is that many purchases contained items from multiple categories. As a result, such purchases are classified according to their primary purpose.

**Table 3**: **Number and share (percent) of payment observations**

| Cash | Debit | Credit | EFT | Other | Total |
|---|---|---|---|---|---|
| 502 (4%) | 6,408 (47%) | 4,593 (34%) | 2,009 (15%) | 180 (1%) | 13,692 |

Note: Payment observations are the sum of the transactions for the 47 diarists in the Canadian Financial Diaries (CFD) project during the six-month period they tracked their transactions. EFT means electronic funds transfer. The *Other* category includes all other methods of payment reported by the diarists. Phase 2 of the CFD project ran from 2021 to early 2023.

Source: CFD project

For retail purchases, debit and credit dominated by both value and volume. When we consider both retail and recurring payments, debit was the most widely used payment method. However, the second-most used payment methods by value were online and mobile payments as well as EFTs. This is due to large recurring payments, such as rent. While recurring purchases were fewer in number, they were for much larger amounts. **Table 4** shows the volume and value share of each payment method for all purchases, including recurring payments, along with the median and mean values of purchases and number of transactions.

Overall, the diarists appear to be low users of cash, especially relative to the evidence provided by the MOP Survey. While some of this could reflect issues related to financial tracking and memory (see Section 2), it could also reflect the payment habits of the diarists and related small-sample bias. This interpretation has some support in the data. Approximately 16% of diarists reported withdrawing cash via an ATM or bank teller in a given month. The mean number of withdrawals among those who reported making ATM withdrawals was 2.29 per month, for an average withdrawal amount of $226. Over half the diarists reported no ATM withdrawals over the study period, while three diarists reported more than 10.

**Table 4**: Value and volume of purchases for the CFD diarists

| | Cash | Debit | Credit | EFT | Cheque |
|---|---|---|---|---|---|
| **Volume share (%)** | | | | | |
| Total | 3 | 48 | 37 | 11 | 1 |
| Recurring only | 0 | 3 | 2 | 5 | 0 |
| **Value share (%)** | | | | | |
| Total | 4 | 35 | 27 | 30 | 4 |
| Recurring only | 1 | 8 | 3 | 24 | 3 |
| **Median transaction amount ($)** | | | | | |
| Total | 25 | 24 | 27 | 62 | 41 |
| Recurring only | 555 | 115 | 52 | 150 | 741 |
| **Mean transaction amount ($)** | | | | | |
| Total | 82 | 57 | 59 | 214 | 480 |
| Recurring only | 571 | 263 | 95 | 391 | 1,705 |
| **Median # of monthly transactions** | | | | | |
| Total | 3 | 19 | 15 | 4 | 1 |
| Recurring only | 1 | 2 | 2 | 3 | 1 |
| **Mean # of monthly transactions** | | | | | |
| Total | 5 | 25 | 23 | 6 | 1 |
| Recurring only | 1 | 3 | 2 | 3 | 1 |

Note: Data are from the 47 diarists in the Canadian Financial Diaries (CFD) project during the six-month period they tracked their purchases. EFT means electronic funds transfer. *Total* represents percentage and amounts for retail and recurring payments combined for the entire reporting period. For value and volume share, *Recurring only* represents the percent of total value or volume share. (For example, 3% of all transactions by volume were made with a debit card. Therefore, debit card use for retail purchases represented 45% of all transactions [48% - 3% = 45%]). For median and mean transaction amounts and monthly transactions, *Recurring only* represents the median or mean amount for recurring payments. Phase 2 of the CFD project ran from 2021 to early 2023.
Source: CFD project

## iii.    Number of transactions by diarists

The diarists varied widely in how many transactions they [made/recorded] per month and the consistency of their number of transactions. **Chart 2** shows the average, minimum and maximum transaction numbers per month, per diarist for all payment methods. The average number of transactions per month was 42, with a median of 37, similar to findings in the 2023 MOP Survey, with an average of 1.13 transactions per day. Figure 2 shows that some diarists were consistent in their monthly transaction numbers. Some, however, ranged quite widely in how many transactions they made per month. The smallest average number of monthly

payments was 13, while the maximum was 127. Across all diarists, monthly transactions ranged from a low of 2 to a high of 162.

**Chart 2: Diarists' mean, minimum and maximum number of payments per month**
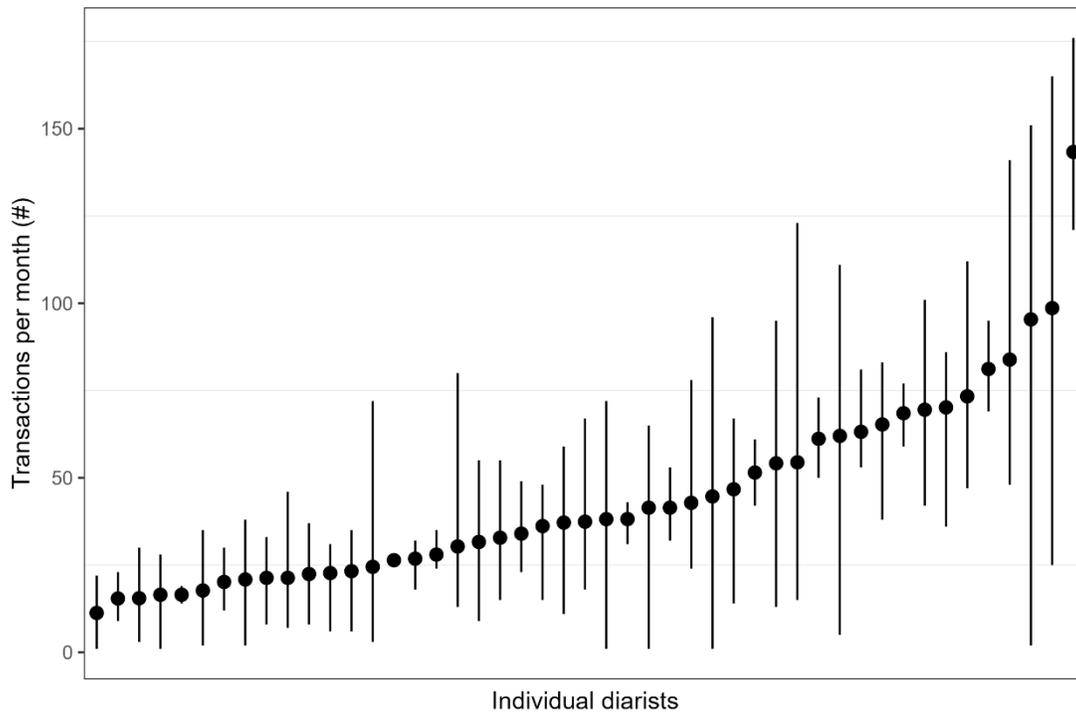


Note: Each dot represents the mean number of transactions per diarist for the full six-month timeframe of Phase 2 of the Canadian Financial Diaries (CFD) project, for each of the 47 diarists. The lines represent the range between the minimum and maximum number of monthly transactions per diarist for each full month of transactions.

Source: CFD project

Last observation: 2023

Diarists appeared to be habitual users of certain payment methods. **Chart 3** below shows a scatterplot that compares per-month retail transactions paid by debit card versus those paid by credit card for each diarist. We can see that some diarists' dots are near the x- or y-axis; this shows diarists who preferred debit cards or credit cards, respectively. This suggests that some diarists had a strong preference in this regard. A subset of diarists did not have a credit card and so are constrained to using debit cards. This is visible in Chart 3 as the dots that run along the x-axis.

**Chart 3: Number of retail credit card versus debit transactions per diarist per month**
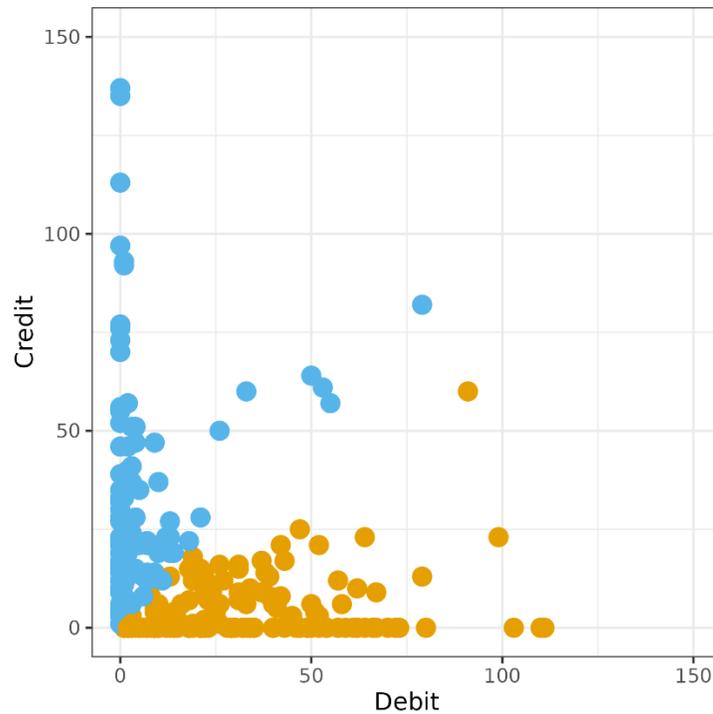


Note: Data are from the Canadian Financial Diaries (CFD) project. Each blue dot represents a month when a diarist used debit for more than 50% of their retail transactions in that month. Each orange dot represents a month when a diarist used credit cards for more than 50% of their retail transactions. Phase 2 of the CFD project ran from 2021 to early 2023.

Source: CFD project

## iv.    Factors associated with payment choice

The results above show notable variation in diarists' use of payment methods. Based on information obtained during the qualitative interviews, three factors seemed to be of particular importance: socio-economic position, comfort with and access to information technology, and financial capability.

Payment habits are associated with diarists' socio-economic positions and neighbourhood characteristics. For instance, diarists with low income and who lived in neighbourhoods with lower average incomes or banking density tended to report limited options for banking services. Diarists with higher incomes or those living in neighbourhoods with greater average incomes or banking density tended to report having access to more banking service options. Similarly, many recent immigrants participating in Phase 2 regularly used a credit card for transactions. In several cases, they were very disciplined to regularly pay their card balances. In interviews, they reported that part of the motivation of using a credit card was to establish or build a credit score. Some diarists in this situation would "pay as you go," meaning that, after each transaction or each day or week, they would immediately transfer money from their bank

account to their credit card account. Reasons they gave for using the credit card as a method of payment included building a credit record, earning credit card points and minimizing bank fees.

We compare the use of credit cards across the 19 newcomers and the 28 non-newcomers (comprising 27 Canadian-born participants and 1 long-term immigrant) and saw the newcomers, on average, used them more than three times as much (**Table 5**).[7] Conversely, newcomers used their debit cards less than the non-newcomer group. We think this difference might be the relative mobility of each group; the newcomer participants, perhaps reflecting experiences in their home countries or their levels of education, perceived or in reality had greater opportunity than the non-newcomers. This led them to place more emphasis on using credit cards to build credit scores.

Another group that stood out as following a unique practice for payment methods was Phase 2 diarists who had experience with fringe financial service providers (e.g., payday lenders, installment lenders). The 5 diarists who completed the six-month diary had a fringe bank loan at the time or had had one in the past. These participants did not use credit cards for transactions. They relied on debit cards (at a similar rate to the non-fringe-bank users) and other payment methods (e.g., cheque, online payment account apps such as PayPal). Likewise, the 12 Indigenous participants relied more on debit and EFT than the non-Indigenous participants did.

**Table 5**: Volume share by payment method for select Phase 2 diarists

|  | Count (#) | Cash (%) | Credit (%) | Debit (%) | EFT (%) | Other (%) |
|---|---|---|---|---|---|---|
| Newcomer | 19 | 2.5 | 62.8 | 22.4 | 9.7 | 2.7 |
| Non-newcomer | 28 | 5.4.2 | 20.4 | 57.3 | 16.9 | 1.2 |
| Sub-total | 47 |  |  |  |  |  |
| Fringe banking users | 5 | 6.9 | .1 | 60.0 | 32.5 | .6 |
| Non-fringe users | 42 | 3.3 | 37.6 | 44.8 | 12.5 | 1.8 |
| Sub-total | 47 |  |  |  |  |  |
| Indigenous | 12 | 3.9 | 10.9 | 65.9 | 18.9 | .5 |
| Non-Indigenous | 35 | 3.6 | 43.9 | 38.1 | 12.8 | 1.7 |

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[7] These data include the 47 diarists who completed the six-month diary.

| | |
|---|---|
| Sub-total | 47 |

Note: Data are from the 47 diarists in the Canadian Financial Diaries (CFD) project during the six-month period they tracked their purchases. EFT means electronic funds transfer. The *Other* category includes all other methods of payment reported by the diarists. *Non-newcomer* means a diarists who has been in the country for at least five years. Fringe banking comprises non-traditional financial service providers such as payday lenders. Phase 2 of the CFD project ran from 2021 to early 2023.

Source: CFD project

The second factor of importance was comfort with and access to information technology. Some diarists preferred "low tech"; they tended to prefer cash, banking with a teller at a bank branch or using an ATM. Other diarists preferred high-tech options for information technology. They were more comfortable using internet and mobile banking or making mobile payments. See Felt, Welte and Talavera (2024) for a discussion of mobile device ownership and mobile payments.

The third factor was financial capability, or the diarist's ability to manage their finances (e.g., track their money, develop and follow a budget and, if applicable, manage credit and investments). Some diarists self-reported low financial capability and difficulty in managing their finances. These diarists appeared more likely to be unaware of their own finances, had difficulty tracking them and tended to report accumulating debt. Diarists with higher financial capability showed relative ease in managing their finances. They were aware of their own finances, able to track them and manage net income gaps.

Based on qualitative assessments drawn from the interviews with 19 of the diarists most familiar to two of the CFD project co-authors (Buckland and Nur, who interviewed them), we group these diarists into one of four quadrants: low or high comfort with and access to information technology, and low or high financial capability (**Table 6**). No participants were low on both scales, and only 4 participants were in the low info tech and high financial capability quadrant. The bulk of the sample had high comfort with and access to info tech, with 7 participants having lower financial capability and 8 having higher capability.

**Table 6**: Classification of selected diarists by financial capability and comfort with information technology
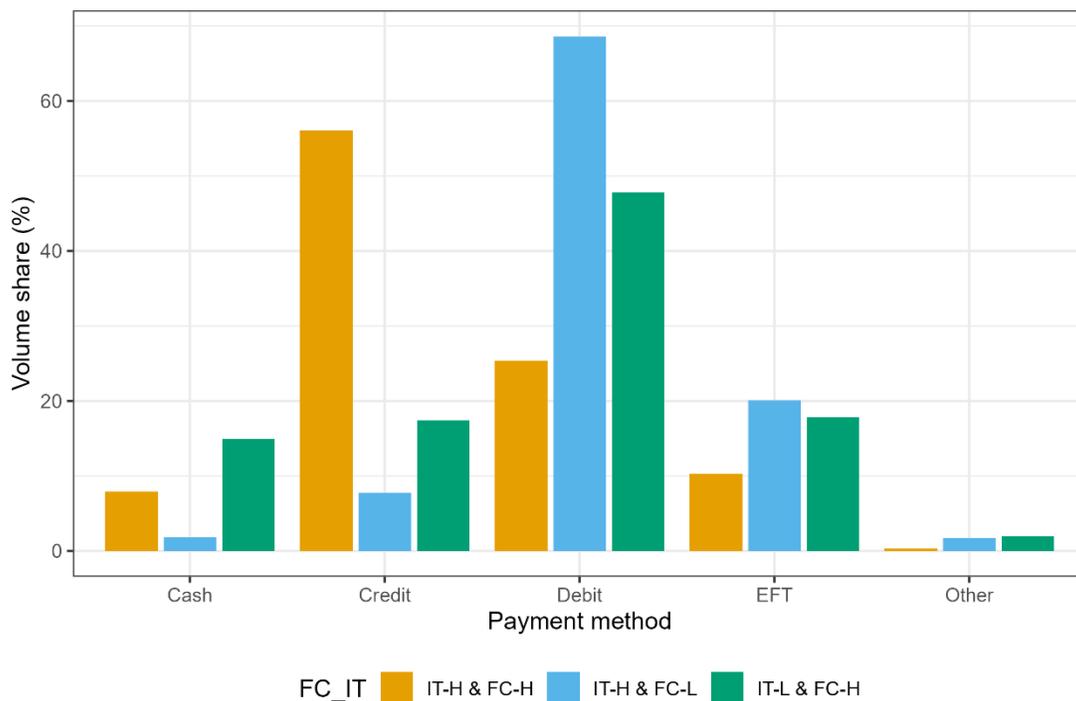
| Financial capability | Lower information technology comfort/access | Higher information technology comfort/access |
|---|---|---|
| Lower | | FD1, FD15, FD18, FD26, FD40, FD64, FD66 |
| Higher | FD14, FD20, FD38, FD52 | FD3, FD5, FD24, FD42, FD44, FD47, FD59, FD61 |

Note: Data are from interviews with 19 of diarists in the Canadian Financial Diaries (CFD) project during the six-month period they tracked their purchases. These diarists are listed by their letter and number identifications in the project. Phase 2 of the CFD project ran from 2021 to early 2023.

Source: CFD project

**Chart 4** shows the average payment methods used by each group in Table 6. This chart illustrates the wide differences of payment methods between the different groups. Those participants most comfortable with information technology were more likely to embrace debit and credit cards. Those diarists with low comfort were more likely to use cash when compared with the other groups.

**Chart 4**: **Average shares of payment methods based on financial capability and comfort with information technology**



Note: IT-H and IT-L stand for high and low comfort with and access to information technology, respectively. FC-L and FC-H stand for lower and higher financial capability, respectively. EFT means electronic funds transfer. The *Other* category includes all other methods of payment reported by the diarists. Data are based on interviews with 19 of the diarists in the Canadian Financial Diaries (CFD) project who completed the six-month diary. Phase 2 of the CFD project ran from 2021 to early 2023.

Source: CFD project

# 6. Bank account scenario analysis

A number of Canadian banks have made a public commitment to offer low-cost or no-cost accounts. These accounts must have a monthly fee of $4.00 or less and permit at least 12 transactions per month. Transactions over that limit incur fees.[8] While fixed monthly fees may

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[8] The Financial Consumer Agency of Canada (FCAC) provides a summary of low-cost and no-cost accounts, eligibility criteria (if applicable), and account features and fees. See https://www.canada.ca/en/financial-consumer-agency/services/banking/bank-accounts/low-cost-no-cost.html. The Government of Canada's *Fall Economic*

be low compared with most other account offerings, the relatively low limit on the number of free transactions may result in higher costs than deluxe bank accounts with higher fixed monthly fees.

In Phase 1 of the CFD, the researchers noted that some diarists had deluxe bank account packages that seemed "misaligned with their needs and therefore too expensive." (Buckland et al. 2024). However, having a deluxe or more expensive bank account package may make sense for some CFD participants who are acting in financially rational ways. As seen above, some diarists conducted over 50 transactions a month in their bank account. In such a case, a more expensive account with a larger transaction allowance before fees apply (up to and including unlimited transactions) might be a cheaper alternative than other types of accounts, such as low-cost or no-cost accounts. We explore this idea in this section.

Similar patterns were observed in the Phase 2 diarists for whom we have some knowledge of their account packages. Some of them used higher-fee accounts with a fixed fee of $15 to $20 per month. Phase 2 diarists in this group include FD15, FD40, FD43, FD64, FD66 and fringe bank users (FD25, FD26, FD35, FD38, FD55, FD58, FD66).[9] In some cases, these diarists reported that they paid the higher service fee, even though their income was low, because they found the number of transactions included with the fee was too limited and they did not feel safe carrying around cash. Several other participants had incurred debts and no longer wished, or were unable, to use a credit card for transactions (**Table 7**).

| | Motivation for account type |
|---|---|
| Low-fee account | Able to minimize account transactions using other payment methods, e.g., cash for the lowest income diarists or credit cards for those with modest incomes |
| Higher-fee account | Unable to manage transactions within limits set on low-fee accounts, so opted for higher-fee accounts |
| Higher-fee account because of credit card constraint | Relied on their bank account for many transactions, in part because of debt constraint accessing a credit card |

Note: Data are from interviews with the 47 diarists in the Canadian Financial Diaries (CFD) project during the six-month period they tracked their purchases. Many diarists, including some with very low incomes, reported using high-fee accounts. Some diarists had difficulties managing their debt, either at the time of the interviews or prior to them. Phase 2 of the CFD project ran from 2021 to early 2023.

Source: CFD project

Unfortunately, we do not know what account packages some of the diarists had, nor do we observe the monthly fees some of them paid. Monthly fees could be unobserved either because the diarists were not charged fees or because the diarists did not record them. Consequently,

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*Statement* (pg. 60) announced that the federal government and FCAC had renegotiated the agreements to include 18 monthly transactions with the monthly fee and to expand eligibility for no-cost accounts. See https://www.budget.canada.ca/update-miseajour/2024/report-rapport/FES-EEA-2024-en.pdf.

[9] Profiles of the diarists are available in Appendix B. It is available at https://financialdiaries.ca/2025/12/18/diarist-profiles/.

we undertake a scenario analysis to compare the potential cost of a low-cost or no-cost account with more deluxe packages. Because we observe the monthly transactions for the diarists, we can compare potential monthly fees the diarists could pay with different bank account packages.

To conduct the scenario analysis, we apply the 2023–24 fee schemes for various accounts offered by the big five banks (Royal Bank of Canada, or RBC; TD Bank; Bank of Montreal, or BMO; Bank of Nova Scotia, or Scotiabank; and Canadian Imperial Bank of Commerce, or CIBC) and digital-only banks (e.g., EQ Bank, Tangerine) to the transactions conducted by Phase 2 diarists. We use the big five banks because they offer services across the country and have publicly committed to provide low-cost and no-cost accounts. For four of the banks, we select three accounts: a low-cost account under the public commitment, a basic transaction account with a higher (but not unlimited) number of transactions and an unlimited account. CIBC provides only two accounts: a low-cost account and one that essentially turns into an unlimited account once a sufficient number of transactions have been made. We include the digital-only banks because they offer bank accounts that feature unlimited transactions for no monthly fee for most transactions, which allows us to compare standard accounts to the free or nearly-free options.

An important assumption in this scenario analysis is that diarists would conduct the same number and type of transactions regardless of which package they have. In other words, the analysis is static—we ignore the fact that diarists may change their behaviour if in reality they were to switch their account package.

For each of the 47 diarists from the full Phase 2 sample who completed the full period, we take their transactions for a full calendar month and calculate the fees they would have paid for those transactions if they had a low-cost account, a basic account or an unlimited account (**Chart 5**). When calculating potential fees, we exclude months when we do not have a full month's worth of transactions (e.g., because a diarist enrolled in the study and began tracking their transactions on the 20th of the month). We calculate fees by adding the account's monthly fee to any fees paid for ATM withdrawals, e-Transfers or transactions in excess of the number permitted by the package. We exclude fees not directly related to transactions, such as for overdrafts or non-sufficient funds.

**Chart 5: Average monthly account fees**
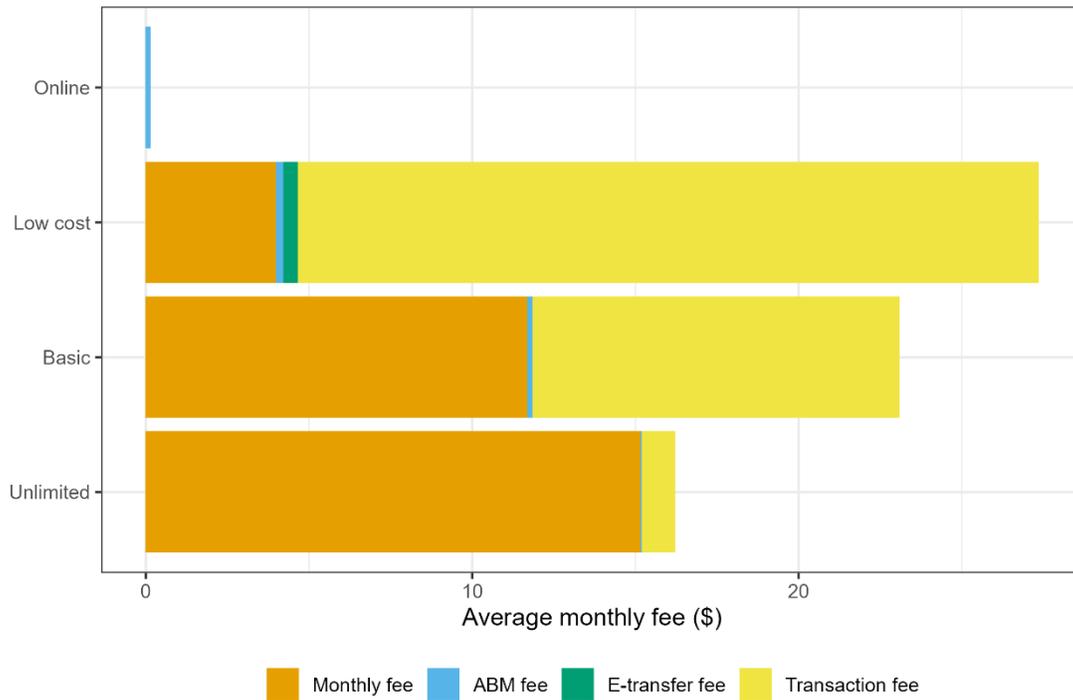
Note: This is a static analysis of the different bank account fees that 47 diarists in the Canadian Financial Diaries (CFD) project would have paid during the six-month period they tracked their purchases. *Online* refers to digital-only banks. *Low cost*, *Basic* and *Unlimited* refer to account packages at one of the big five banks. Phase 2 of the CFD project ran from 2021 to early 2023.

Sources: CFD project, Royal Bank of Canada, TD Bank, Bank of Montreal, Bank of Nova Scotia, Canadian Imperial Bank of Commerce, EQ Bank, Tangerine, Alterna Bank, PC Financial, Simplii Financial, Innovation Credit Union, and Canadian Mennonite University, University of British Columbia and Bank of Canada calculations

As shown in Chart 5, the average cost (comprising a fixed monthly fee plus per-transaction costs) for a low-cost or no-cost account would be approximately $30 a month, a basic account would be about $25 a month and an unlimited account would be about $17 a month. This suggests that, overall, some diarists would pay more in average costs with either the low-cost or no-cost accounts or basic banking account when compared with the unlimited account. Average costs, however, do not tell the full story. Diarists' monthly transactions with their bank account range from a low of one transaction to a high of 137, with a median of 17 and a mean of 28. **Table 8** shows the distribution of fees from the different accounts. While many diarists would pay the fixed monthly fee or slightly above it, some diarists would pay on average more than $50 a month. Diarists without a credit card would generally pay more, on average, than those with credit cards. Unlimited accounts would generally have monthly fees in a comparatively small range.

**Table 8**: **Range of mean, minimum and maximum monthly fees per account type for diarists with and without a credit card**

In dollars

| Account package | Credit card | No credit card |
|---|---|---|
| Online | .04 (0, 7.50) | .79 (0, 10.00) |
| Low cost | 23.20 (3.95, 192.00) | 53.6 (3.95, 148.00) |
| Basic | 20.5 (11.0, 162.00) | 39.6 (11.00, 127.00) |
| Unlimited | 16.10 (6.95, 22.00) | 16.80 (6.95, 24.00) |

Note: This static analysis shows the monthly fees for different bank accounts both with and without a credit card that 47 diarists in the Canadian Financial Diaries (CFD) project would pay during the six-month period they tracked their purchases. *Online* refers to digital-only banks. *Low cost*, *Basic* and *Unlimited* refer to account packages at one of the big five banks. In each case, the minimum and maximum fees appear in parentheses after the mean. Phase 2 of the CFD project ran from 2021 to early 2023.

Sources: CFD project, Royal Bank of Canada, TD Bank, Bank of Montreal, Bank of Nova Scotia, Canadian Imperial Bank of Commerce, EQ Bank, Tangerine, Alterna Bank, PC Financial, Simplii Financial, Innovation Credit Union, and Canadian Mennonite University, University of British Columbia and Bank of Canada calculations

# 7. Discussion and conclusion

In this report, we use data from Phase 2 of the CFD project to conduct a case study in how some lower-income Canadians pay. We find that participants in the project were able to use a bank account to facilitate a variety of payment methods, such as debit, EFT and cheque. Payment use is often habitual, with some diarists using debit or credit almost exclusively for their payments. Some diarists generally made a similar number of payments each month, while others varied significantly between the maximum and minimum number of payments per month. Our static simulation suggests that some diarists who made a lot of transactions during the month may have been acting in a financially rational way by choosing bank account packages with higher monthly fees. While low-cost accounts are more prevalent among lower-income Canadians than the overall population, they may not have been appropriate for some of the diarists given their payment habits. While we must be careful about generalizing these findings, they highlight how a mix of preferences and constraints can influence payment habits. (For an example, see Carvalho, Meier and Wang (2016), who look at the effect of financial resources on present bias, risk taking and financial decisions.) However, more work is required. Some topics for future research include:

- whether and how low-cost and no-cost accounts are being used by the Canadians they were designed for

- the range of account options and what features may be needed to enable full financial inclusion (such as being able to process direct withdrawals or deposits on prepaid payment products), particularly for Canadians without a bank account

- the role of preferences and constraints in being banked, selecting a bank account and choosing a payment method

- drivers of payment behaviours

- the payment methods used by unbanked Canadians and their reasons for doing so

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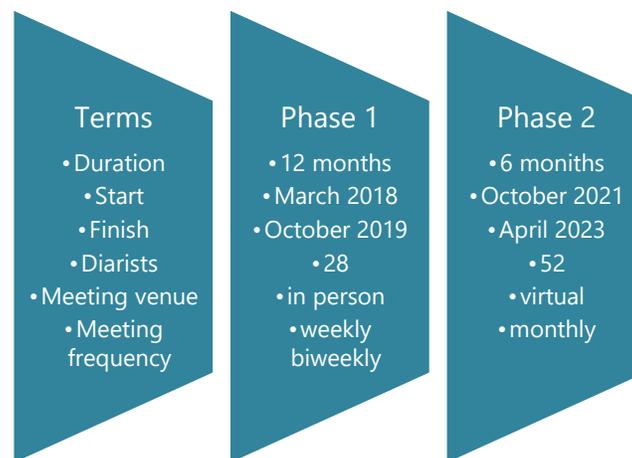
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# Appendix A: Qualitative overview of Phase 1 diarists and comparison with Phase 2

The Canadian Financial Diaries (CFD) research project started in 2017 with a mini test of the methods and then began Phase 1 (of two) in March 2018 (**Figure A-1**). The first phase finished in October 2019. Phase 1 [lasted/ran] longer than one year because participants began the project at different times. All participants, initially, were in Winnipeg. A total of 28 people participated in Phase 1. Of these, 23 diarists completed the 12-month term; the remaining 5 participants engaged with it for less than 12 months but were included in the results because of substantial contributions they made. The CFD project researchers continued to input, clean and analyze data through 2020 and into early 2021 as the pandemic began. They also completed a follow-up survey with available diarists in the summer of 2020, focused on the effect of the pandemic on their finances.

Phase 2 ran from 2021 to early 2023 with 52 diarists, and this diary ran for six months (47 completed the full duration, and 5 completed less than six months). Because of the pandemic, the interviewing was done online or by telephone, and meetings were held once a month. Participants came from across the country, although a large share were from Calgary and Winnipeg.

**Figure A-1: Comparison of Phases 1 and 2 of the Canadian Financial Diaries (CFD) project**



| Terms | Phase 1 | Phase 2 |
|---|---|---|
| •Duration | •12 months | •6 moniths |
| •Start | •March 2018 | •October 2021 |
| •Finish | •October 2019 | •April 2023 |
| •Diarists | •28 | •52 |
| •Meeting venue | •in person | •virtual |
| •Meeting frequency | •weekly biweekly | •monthly |

Source: CFD project

Most diarists, 66% across both phases, were female (**Table A-1**). The average age of diarists was 41, and they ranged from 19 to 67 years old. Household size was small, particularly in Phase 1, with an average of 1.7 people compared with the 2.8-person average size in Phase 2. Most diarists, 62%, rented their accommodations. Average education levels were 14.6, meaning on

average, diarists reported completing 2.6 years of post-secondary education. While 42 diarists were either fully or partly employed, 33 diarists were fully unemployed. Average annual income was lower among Phase 1 participants, at $18,779, compared with Phase 2 participants who averaged an income of $31,744. The CFD researchers estimate that the income of 64% of Phase 1 diarists and 68% of Phase 2 diarists fell below the official poverty line. This low economic position is reinforced by the net assets held by diarists, which averaged $64,946. Three-quarters of Phase 1 diarists had internet at home, while all Phase 2 diarists had internet at home.

**Table A-1**: Diarist socio-demographic data from Phase 1 and Phase 2

|  | Phase 1 | Phase 2 |
|---|---|---|
| **Gender** |  |  |
| **Male** | 5 | 9 |
| **Female** | 23 | 43 |
| **Age** |  |  |
| **Average** | 42 | 39 |
| **Minimum** | 19 | 25 |
| **Maximum** | 63 | 67 |
| **People in household** |  |  |
| **Average** | 1.7 | 2.8 |
| **Minimum** | 1 | 1 |
| **Maximum** | 5 | 6 |
| **Years of education** |  |  |
| **Average** | 14 | 15.2 |
| **Minimum** | 9 | 12 |
| **Maximum** | 18 | 23 |
| **Housing** |  |  |
| **Rent** | 22 | 40 |
| **Own** | 2 | 11 |
| **Other** | 4 | 1 |
| **Employment** |  |  |
| **Full-time** | 8 | 27 |
| **Part-time** | 7 | - |
| **Unemployed** | 11 | 22 |
| **Estimated household income** |  |  |

| | | |
|---|---|---|
| Average | $18,779 | $31,744 |
| Minimum | $2,000 | $6,000 |
| Maximum | $90,000 | $85,000 |
| Net assets | | |
| Average | $21,078 | $108,815 |
| Internet at home | | |
| Yes | 21 | 52 |
| No | 7 | 0 |

Note: Data are from Phase 1 and Phase 2 of the Canadian Financial Diaries (CFD) project. The CFD project phases ran from March 2018 to early 2023.

Source: CFD project

# Preliminary results on and related to payment methods from Phase 1

The researchers undertook a series of small-scale quantitative investigations with the Phase 1 data, including a spatial analysis and an examination of diarists' methods of payment.

## Spatial analysis of the Phase 1 diarists

To understand better how geography affected the Phase 1 diarists with respect to local average income and access to banking, the CFD project researchers undertook a small-scale spatial analysis. First, they identified the forward sortation area (FSA, a geographic unit associated with the first three digits of a postal code) for each diarist. They then found various indicators for the average for all diarist FSAs, compared with average FSAs, both in Winnipeg and across Canada. They found that the average annual income for FSAs in which Phase 1 diarists lived is lower than average income for all FSAs in Winnipeg and in Canada (**Table A-2**). The same relative position applied to median income, too, but the gap between the diarists' FSAs and the Canada-wide FSAs was lower for median income than for mean income.

**Table A-2**: Average income for Phase 1 diarists' forward sortation areas, compared with the Winnipeg and Canadian averages

| | Median income | Mean income |
|---|---|---|
| Diarists | $28,735 | $32,686 |
| Winnipeg | $31,933 | $37,605 |
| Canada | $31,979 | $39,391 |

Note: Data are from Phase 1 of the Canadian Financial Diaries (CFD) project. Phase 1 ran from March 2018 to October 2019.

Sources: Statistics Canada, CFD project, and Canadian Mennonite University, University of British Columbia and Bank of Canada calculations

The CFD researchers noted that diarists were more likely to be centrally located, in either an inner city or downtown. Downtown Winnipeg has a high concentration of financial institutions (FIs) and automated teller machines (ATMs), while suburban and rural FSAs have much lower densities of FIs and ATMs. The researchers found that diarists' FI and ATM densities were higher than densities found in Winnipeg in general and Canada-wide (**Table A-3**).

**Table A-3**: ATM density in Phase 1 diarists' neighbourhoods compared with the Winnipeg and Canada averages

|  | FI ATMs | White label ATMs | Total ATMs |
|---|---|---|---|
| Diarists | 17.1 | 44.8 | 61.9 |
| Winnipeg | 11.6 | 30.0 | 41.6 |
| Canada | 12.6 | 26.2 | 38.7 |

Note: Data are from Phase 1 of the Canadian Financial Diaries (CFD) project. Phase 1 ran from March 2018 to October 2019. FI means financial institution, and ATM is automated teller machine. White label ATMs are owned and operated by independent organizations instead of FIs.

Sources: Statistics Canada, Mastercard, CFD project, and Canadian Mennonite University, University of British Columbia and Bank of Canada calculations

## Methods of payment

To explore how important cash and digital payments were to the Phase 1 diarists, the CFD project researchers measured the diarists' use of three different payment methods. This exercise was to examine CFD participants' methods of payment, whether cash, debit or credit. The analysis was done based on the volume of transactions (the number of times a method was used) and value of transactions (the total value of spending by method). Transactions made by a diarist to themselves (i.e., transfers between cash and debit, cash and credit, and debit and credit) were excluded, so that researchers focused only on purchases.

They found that debit was diarists' most preferred method of payment. **Chart A-1** plots each participant's use of cash on a scale from zero to one (one being all transactions in the diary conducted using cash). Many of the participants used one method of payment almost exclusively. Surprisingly, the account fees reported for the participants in the upper quartile of debit use show that many of them paid for a deluxe bank account, which suggests they were unable to maintain a minimum deposit necessary to waive the fee.

Participants #10, #11, #16, #34, #2, #6, #22 and #27 paid for an unlimited bank account. Surprisingly, one of these was in the very low-income group. Participant #29, who on average paid monthly account fees worth $30.52 and had 197 debit transactions over the course of the diary, looked like they were paying either overdraft fees or transaction fees for surpassing their allowed debit transactions.[10] This person was also very cash-reliant, with cash making up 59%

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[10] In Phase 1, diarists were identified by number.

of all transactions and debit the remaining 41%. Most of their spending (48% of their transactions) was for amounts less than $15.

Additionally, participant #23 paid a lot for account fees, including a relatively expensive account that did not include unlimited debits: they had several account fee transactions in their diary for an amount of $10.95 but a separate fee of $27, which they described as "withdrawal fees."

**Chart A-1**: **Payment choice and volume for the Phase 1 diarists, by payment method**
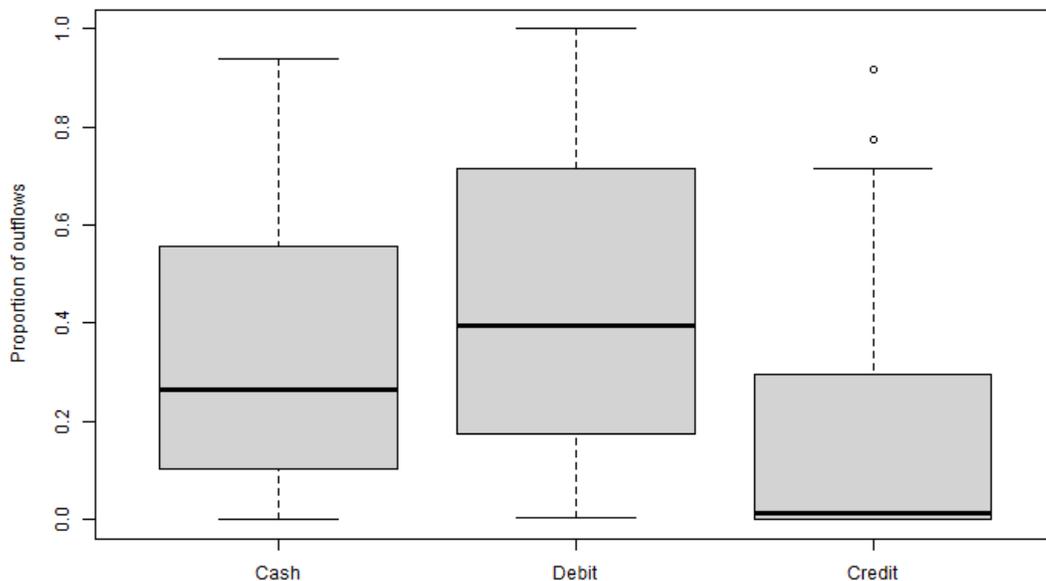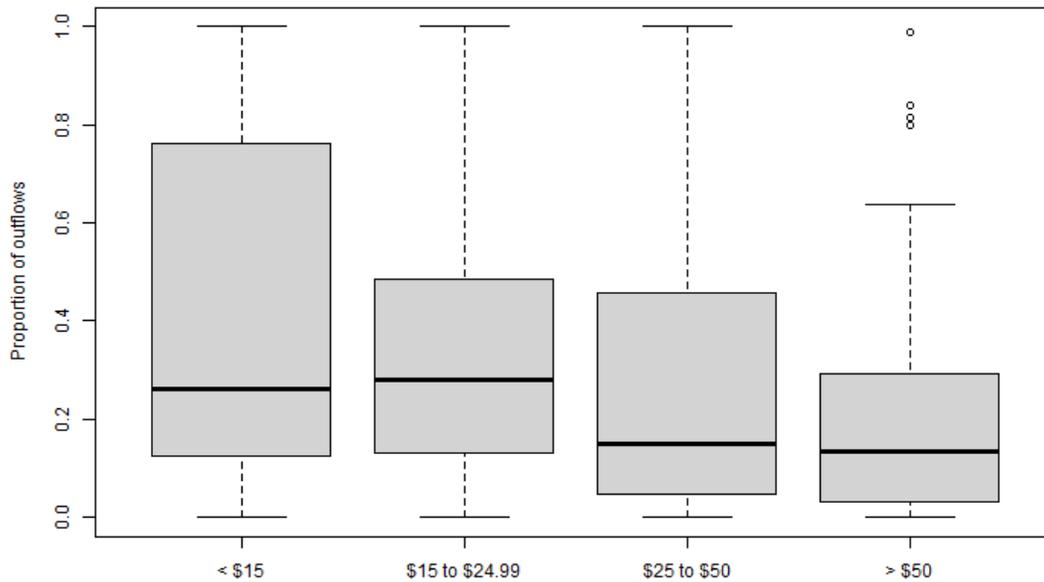


Note: The chart represents a boxplot of purchase volumes. The thick solid black line in each box shows the median proportion of purchases made with each method. Shaded gray boxes represent 25th to 75th percentiles.

Sources: CFD Phase 1 and Bank of Canada calculations

The CFD researchers investigated the relationship between method of payment and size of transaction. When transactions were sorted by size, diarists became less reliant on cash as a method of payment (**Chart A-2**, **Chart A-3** and **Chart A-4**). The median and mean decreased at larger transaction sizes, showing a downward trend at larger transaction values. But some outlier participants relied heavily on cash as a method of payment at all transaction sizes. The means at transaction sizes for cash of less than $15, $15–$24.99, $25–$50 and greater than $50 were 42%, 36%, 31% and 25%, respectively (**Chart A-2**). At each transaction size, the means were larger than the medians, and the skew is a result of a few participants who were very

reliant on cash. Participants #24, #19, #25 and #20 were all very reliant on cash, conducting 94%, 88%, 91% and 93% of all their transactions with cash, respectively.

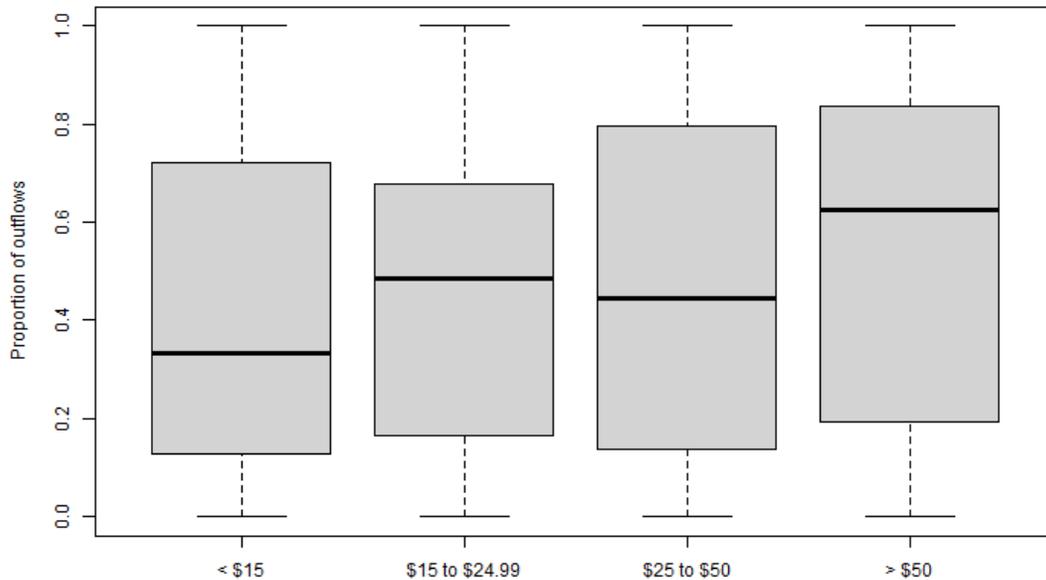**Chart A-2:** Cash payment volume share by transaction size for the Phase 1 diarists



Note: The chart represents a boxplot of cash purchase volumes. The thick solid black line in each box shows the median proportion of purchases made for each transaction size. Shaded gray boxes represent 25th to 75th percentiles.

Sources: CFD Phase 1 and Bank of Canada calculations

As cash use dropped, by transaction size, debit payment shares increased (**Chart A-3**). Debit was a popular method of payment among the CFD Phase 1 sample. And debit shares increased with transaction size.

In the small transaction category (less than $15) the mean for transactions using debit as a method of payment was 41%, and the mean increased with payment size. Similar to cash, the median value was smaller than the mean value at most transaction sizes, and the mean was skewed by some diarists heavily reliant on debit.

**Chart A-3**: **Debit card payment volume shares by transaction size for the Phase 1 diarists**

Note: The chart represents a boxplot of debit purchase volume. The thick solid black line in each box shows the median proportion of purchases made for each transaction size. Shaded gray boxes represent 25th to 75th percentiles.

Sources: CFD Phase 1 and Bank of Canada calculations

Credit cards were not as popular for the diarists. These transactions were the lowest use payment method in the sample; they made up only 20% of all transactions, compared with 36% for cash and 44% for debit cards (**Chart A-4**). Many of the participants did not use—and some did not own—credit cards. At the under $15 level, mean credit card volume shares were at their lowest, at 17%. As many diarists did not use credit cards, the median was lower, at nearly 0%.

**Chart A-4**: **Credit card payment volume share by transaction size for the Phase 1 diarists**
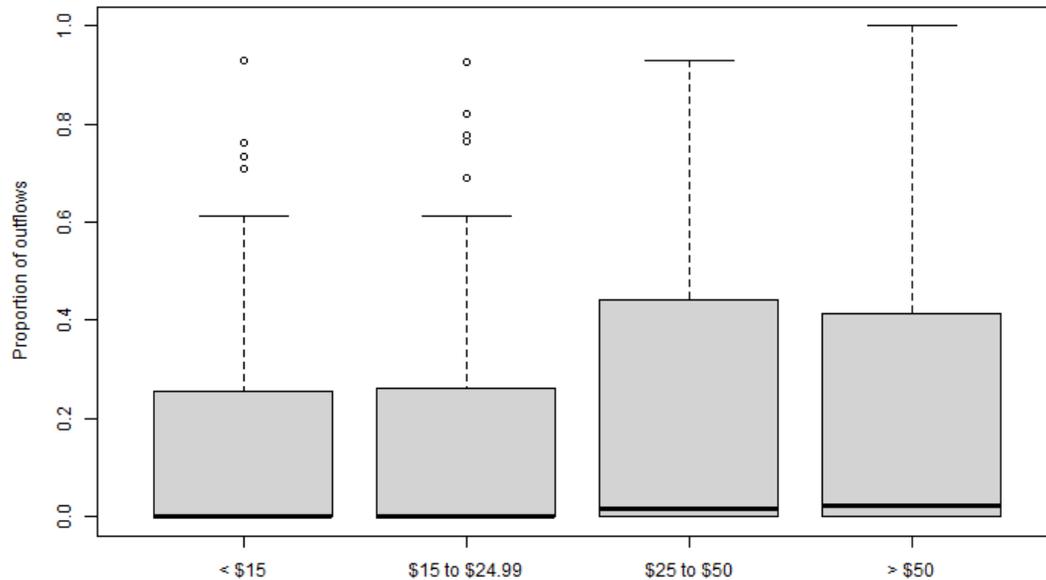
Note: The chart represents a boxplot of credit purchase volumes. The thick solid black line in each box shows the median proportion of purchases made for each transaction size. Shaded gray boxes represent 25th to 75th percentiles.

Sources: CFD Phase 1 and Bank of Canada calculations

Other observations from Phase 1 of the CFD project included that:

- older participants were less likely than younger ones to use credit cards, compared with cash and debit cards, as a method of payment

- participants with more years of education were more likely to use credit as a method of payment than those with fewer years

- people with higher incomes were more likely to use credit as a method of payment than those with lower incomes

- Indigenous participants were the most reliant on cash and the least reliant on credit

- people without an internet connection were very averse to using credit for payments

## Payment method types and archetypes

Henry et al. (2023) categorize consumers based on their use of methods of payment in common environments. As seen in **Table A-4**, CFD Phase 1 diarists fit into any of these categories apart from the early adopter digital-only group.

**Table A-4: Methods of payment of select consumers in common environments**

| Categories of consumers | Point of sale | Person to person | Online | Bill payment | Relevance to CFD |
|---|---|---|---|---|---|
| Typical, well-connected consumer<br>Can access a range of payment options | Cash, debit, credit, mobile or digital wallet, stored-value card | Cash, cheque, e-transfer, mobile or digital wallet | Credit, mobile or digital wallet, stored-value card | Cash, debit, credit, cheque, e-Transfer, pre-authorized debit, online bill pay, mobile or digital wallet, stored-value card | Relevant to well-off diarists |
| Early adopter<br>Digital-only lifestyle | Debit, credit, mobile or digital wallet | Mobile or digital wallet, Interac e-Transfer® | Credit, mobile or digital wallet | Debit, credit, mobile or digital wallet | Not very relevant to CFD diarists |
| Cash-dependent<br>Underbanked: Depends on cash, no debit, credit or stored-value cards | Cash | Cash | None | Cash | Relevant, particularly to several diarists |
| High privacy<br>Demands anonymity, does not want purchases tracked | Cash, stored-value card funded with cash | Cash | Stored-value card funded with cash | Cash, stored-value card funded with cash | Relevant to small number of diarists |
| Technology averse<br>Avoids digital and online payments | Cash, debit, credit | Cash, cheque | Limited access | Cash, cheque, pre-authorized debit, debit, credit | Relevant to a small number of diarists |

Note: Consumer categories and common environments are from Henry et al. (2023). Stored-value cards are prepaid cards or gift cards, such as those from Mastercard, Visa, or a specific retailer. Data are compared with Phase 1 of the Canadian Financial Diaries (CFD) project, which ran from March 2018 to October 2019.

Sources: Henry et al, 2023. CFD project, Bank of Canada, and Canadian Mennonite University, University of British Columbia and Bank of Canada calculations.

# Canadian Financial Diaries project: results by phase

Phase 1 participants had, on average, a lower socio-economic situation than those in Phase 2.[11] This is reflected in a variety of indicators. For instance, more Phase 1 participants rented their housing than Phase 2 participants did (**Table A-5**).

**Table A-5: Housing statistics of diarists, by phase of the CFD project**

|  | Phase 1 | Phase 2 | Total |
|---|---|---|---|

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[11] This is partly due to the phases having different recruitment processes. Also, because Phase 2 ran virtually, participants in that phase needed access to a computer and internet (or an alternative).

| | | | |
|---|---|---|---|
| Rent | 22 | 40 | 62 |
| Own | 2 | 11 | 13 |
| Other | 4 | 1 | 5 |

Note: *Other* refers to diarists who neither owned nor rented. Data are from Phase 1 and Phase 2 of the Canadian Financial Diaries (CFD) project, which ran from March 2018 to early 2023.

Source: CFD project

This difference is also reflected in household income and assets (**Table A-6**). In terms of employment, Phase 1 and Phase 2 participants were about equally likely to be employed (**Chart A-6**). However, Phase 1 participants were more likely to be casually employed than participants in Phase 2. In Phase 1, for instance, there were 7 full-time employed, 10 unemployed, 3 retired and 8 casually employed, for a total of 28 diarists.

**Chart A-6**: **Employment status of diarists, by phase of the CFD project**
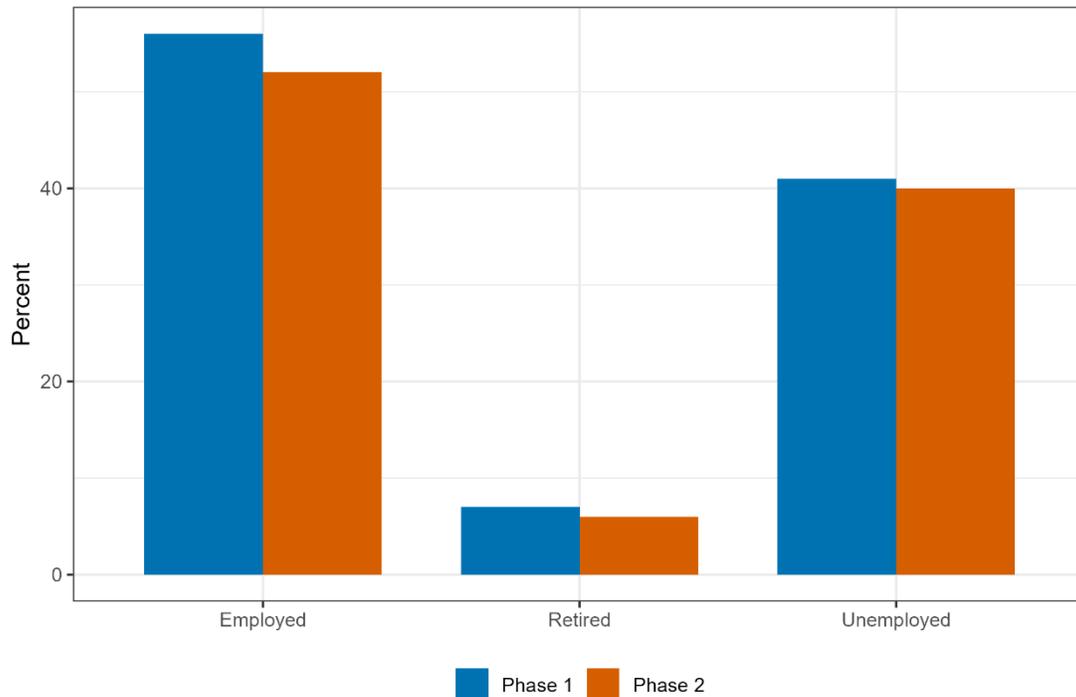


Note: Data are from Phase 1 and Phase 2 of the Canadian Financial Diaries (CFD) project, which ran from March 2018 to early 2023.

Source: CFD project

**Table A-6**: **Household income and assets of diarists, by phase of the CFD project**

| | Phase 1 | Phase 2 |
|---|---|---|

| | | |
|---|---|---|
| Estimated household income | $18,779 | $31,744 |
| Net assets | $21,078 | $108,815 |

Note: Data are from Phase 1 and Phase 2 of the Canadian Financial Diaries (CFD) project, which ran from March 2018 to early 2023.
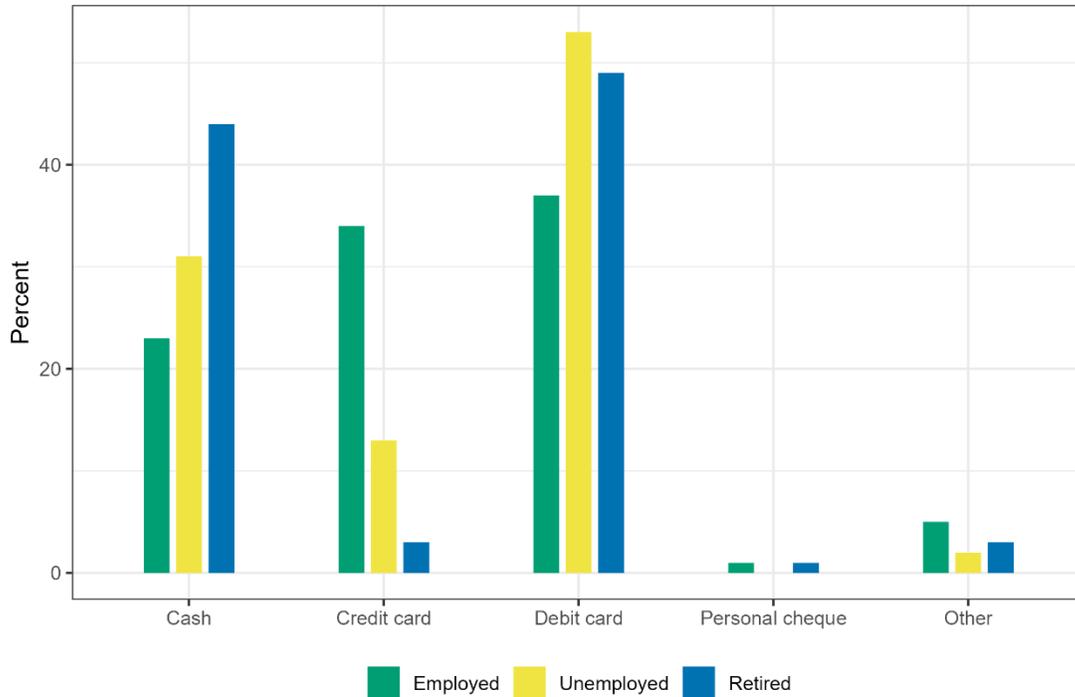
Source: CFD project

## Phase 1 diarist payment and receipt methods

Method data for Phase 1 included means of both payment and receipt. This was different from Phase 2 data, below, which included only payment data. Through the interviewing process, the CFD project researchers noted that income and employment status seemed to have a bearing on the payment/receipt method. For instance, interviewers noticed that participants with the lowest incomes and most precarious employment were least likely to use a credit card for payments. Some members of this group used low-fee accounts and cash, while others used more expensive accounts.

## Differences by method

The researchers noted that, across the groups, debit card was the most popular method of paying (**Chart A-7**). Cash was relatively more popular for the unemployed and retired than for the employed diarists. Credit was the most popular for the fully employed participants and less popular for the rest. Cheques were used infrequently. Among the different groups, participants in employment were the most likely to use several methods of payment (**Table A-7**). Retired and unemployed diarists tended to use debit but used credit much less.

**Chart A-7**: **Frequency of payment methods of the Phase 1 diarists, by employment group**



Note: The *Other* category includes all other methods of payment reported by the diarists. Data are from Phase 1 of the Canadian Financial Diaries (CFD) project, which ran from March 2018 to October 2019.

Source: CFD project

**Table A-7**: **Frequency of payment methods of the Phase 1 diarists, by employment group**

| | Cash | Credit card | Debit card | Personal cheque | Other |
|---|---|---|---|---|---|
| **Employed** | 23 | 34 | 37 | 1 | 5 |
| **Unemployed** | 31 | 13 | 53 | 0 | 2 |
| **Retired** | 44 | 3 | 49 | 1 | 3 |

Note: The *Other* category includes all other methods of payment reported by the diarists. Data are from Phase 1 of the Canadian Financial Diaries (CFD) project, which ran from March 2018 to October 2019.

Source: CFD project