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| **Summary Metadata** | | |
| **Title**  *Title of the publication supported by the data and programs* | An Exploration of First Nations Reserves and Access to Cash |
| **Author(s)** | Heng Chen, Walter Engert, Kim P. Huynh and Daneal O’Habib |
| **ORCID**  *Author name: ORCID id* | *For assistance creating your unique ORCID please contact* [*Knowledge and Information Services - Scholarly Communications*](mailto:%20Schol-Com-Savante@bank-banque-canada.ca)*.* |
| **Series Name** | Staff discussion paper |
| **Series Number** |  |
| **Publication Link** |  |
| **Publication Citation**  *Including publication date* |  |
| **Description** |  |
| **JEL Codes**  *Copied from the publication metadata* |  |
| **Resource Type\***  \* all are required | Analytical Datasets  Software/Programs  Readme file |
| **Resource Overview**  *A detailed account of the data and software package submitted* | This data and software package contain the R scripts needed to generate the final tables and figures. This package also contains data cleaning code to replicate the final data set used for analysis. The readme.txt file gives a summary of all the R code and data sets in the repository. Lastly, the readme provides instructions on how to replicate the full analysis.  The data provides travel and geodistance distance measure to the nearest cash source for all band office locations in Canada. Moreover, the data provides relevant summary statistics for the CSDs associated with each band office under study. These are used to generate the key tables and figures in the analysis. |
| **File Names and Extensions**  *Include file names and types* | api\_key.txt  data\_process\_1.R  data\_process\_2.R  data\_process\_3.R  data\_process\_4.R  data\_process\_5.R  output\_1.R  output\_2.R  master\_output.R  master\_process.R  band\_reserve\_count.csv  band\_summary\_stats.csv  distance\_processed.csv  ferry\_routes.csv  readme.txt  Note: See readme.txt for details about each file. |
| **Software**  *The software and applicable programming code used to produce the publication.*  *Please record all programs used for any part of the data processing and analysis.* | R |

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| **Technical Metadata** | | |
| **Life Cycle Status**  ***Active****: still receiving current observation points; data is still being captured/collected/created by provider.*  ***Terminated****: no longer receiving observation points; data is no longer being captured/collected/created by provider.* | Terminated |
| **Periodicity**  *Frequency of the compilation of the dataset.*  *Additionally, add any information needed to describe the periodicity type of the dataset.* | Annually |
| **Time Period Covered -start date**  *The extent or scope of the content of the dataset with respect to the time period to which the dataset refers* | 2016/01/01 |
| **Time Period Covered -end date** | 2018/Q1 |

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| **Contextual Metadata** | |
| **Methodology**  *Description of methods used for data manipulation (describe how the data was generated from the raw or collected data)* | Manipulation:   * Download CSD demographic data * Pull population data for all CSDs * Flag which CSDs belong to reserve based on csd\_type variable * Differentiation between WL ATM and FI ATM * Process the lat/lon variable from MC data so we can use it for spatial analysis * Webscrape NW store addresses * Geocode NW addresses * Find the nearest WL-ATM, FI-ATM, branch and NW store location for each * Compute geodistance to each cash source for each band office * Find the nearest cash source for each band office and extract coordinates * Compute travel distance * Process route data and string match for “ferry” to flag all ferry routes * Compute distance to population center for each band office * Spatial join band office locations to CSD location * Extract the CSD name that each band office falls under and join census csd population * Pull summary statistics for all CSDs that contain a band office location.   Estimation:   * Compute geodistance and travel distance based on cash source coordinates and band office coordinates * Compute geodistance to the nearest population center for all band offices   Imputation:   * Geocoded cash sources (NW store) * Impute missing travel data with geodistance data where feasible (see paper for more detail) * Top code the remain missing travel data (see paper for more detail) |
| **Data Break**  *Breaks or abnormalities in statistical data due to a change in the standards for defining and observing a variable over time* | No data break. |
| **Source**  *The primary data source(s) from which your dataset(s) has/have been derived.* | |  |  | | --- | --- | | Data | Description and Source | | Band office locations | Geolocations of First Nations are from a dataset provided by Aboriginal Affairs and Northern Development Canada (AANDC). Each geographical coordinate represents a band administrative office address as registered in Indigenous and Northern Affairs Canada (INAC) Band Governance Management System (BGMS). Date last modified is 1 March 2016. | | ATM locations | Geolocations of ATMs are from a dataset obtained from MasterCard. This dataset also identifies the owner of each ATM, which facilitates differentiating white-label ATMs and FI-owned ATMs. This dataset is updated annually. | | Financial institution branch locations | Locations of financial institution branches are from the Financial Institution File (FIF) provided by Payments Canada. The FIF (.pdf) can be found [here](https://www.payments.ca/our-directories/financial-institutions-branch-directory). See Chen and Strathearn (2020) for an explanation of the data extraction method and related considerations. This dataset is updated annually; a 2018 vintage was used. | | Census subdivision boundaries | Census subdivision (CSD) is a term used by Statistics Canada for municipalities or other areas that are comparable to municipalities for statistical reporting and aggregation. The 2016 CSD cartographic boundary file contains the boundaries of all census subdivisions, covering all of Canada. Six of the 54 CSD types are associated with reserves: Indian Reserve (IRI); Indian settlement (S-É); Indian government district (IGD); Terres réservées aux Cris; Terres réservées aux Naskapis (TK); and, Nisga’a land (NL). The reference date for the geographic area boundaries in the cartographic boundary files is 1 January 2016. | | Census subdivision socioeconomics | The [2016 Census Profile](https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page_Download-Telecharger.cfm?Lang=E&Tab=1&Geo1=CSD&Code1=59&Geo2=PR&Code2=01&SearchText=&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0) provides socioeconomic data for reserves (or other CSD types if the band office does not correspond to a reserve). The reference date for this dataset is 10 May 2016. | | Population centre boundaries | A population center is defined by Statistics Canada as an area with a population of at least 1000 and no fewer than 400 persons per square kilometre. Geographical locations for population centres are from the 2016 cartographic boundary files on Statistics Canada. The reference date for this dataset is 1 January 2016 | | North West Company stores | The North West Company provides the location of its stores on its website; see [here](https://www.northmart.ca/our-stores/locator) for the store locator tool. Store locations were webscraped on 25 November 2020 using an R script. |   Note: In order to fully replicate the analysis, download the publicly available data and save in the data/unprocessed folder. Mastercard and fif data is needed to complete the replication (data cleaning code is provided) |
| **Relation**  *Citations for resources related to the data*  *e.g.,*  *Is extension of: This paper builds upon a previous working paper, 2010-24* [*Banks, Credit Market Frictions, and Business Cycles*](http://www.bank-banque-canada.ca/en/res/wp/2010/wp10-24.html)*, author: Ali Dib*  *Include a complete citation.* | The bank branch analysis is linked to: Chen, H. and M. Strathearn. 2020. “[A Spatial Model of Bank Branches in Canada](https://www.bankofcanada.ca/2020/02/staff-working-paper-2020-4/).” Bank of Canada Staff Working Paper 2020-4. |
| **Related Material**  *Include links to related material which provide context for understanding the data and software package; for example, a code book.* |  |

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| **Contacts/Access** | | |
| **Owner**  *Owner of the dataset primarily responsible for its support, maintenance and to answer questions about the usage of the described resource.* | Currency (CUR) | |
| **Data Access Contact** | Data access is restricted; contact MEDR (K&IS), email: [MEDRSA](mailto:MEDRSA) | |
| **Security Category**  *Indication of the security status of the dataset(s)* | Non-Sensitive / Non délicat | |
| **Distribution Rights**  *Information about the rights related to distribution, sharing and publication of the resource* | The files in *MEDR\_FNAC* can be distributed internally with permission from the authors. | |
| **Authority**  *The legislation, contracts or agreements within which statistical data are collected or disseminated* | Contract of Mastercard ATM location data is managed by Alison Layng (CS). | |
| **External Organization Contact**  *Contact name at the external organization that one can contact for information about the data resource purchased, received, or sent.* | Financial Institutions File from Payment Canada: fif@payments.ca | |
| **Metadata Maintenance** | | |
| **Update Note**  *Documentation about maintenance of the resource* | |  |
| **Last Reviewed Date**  *The date that the metadata was last reviewed in the repository* | |  |