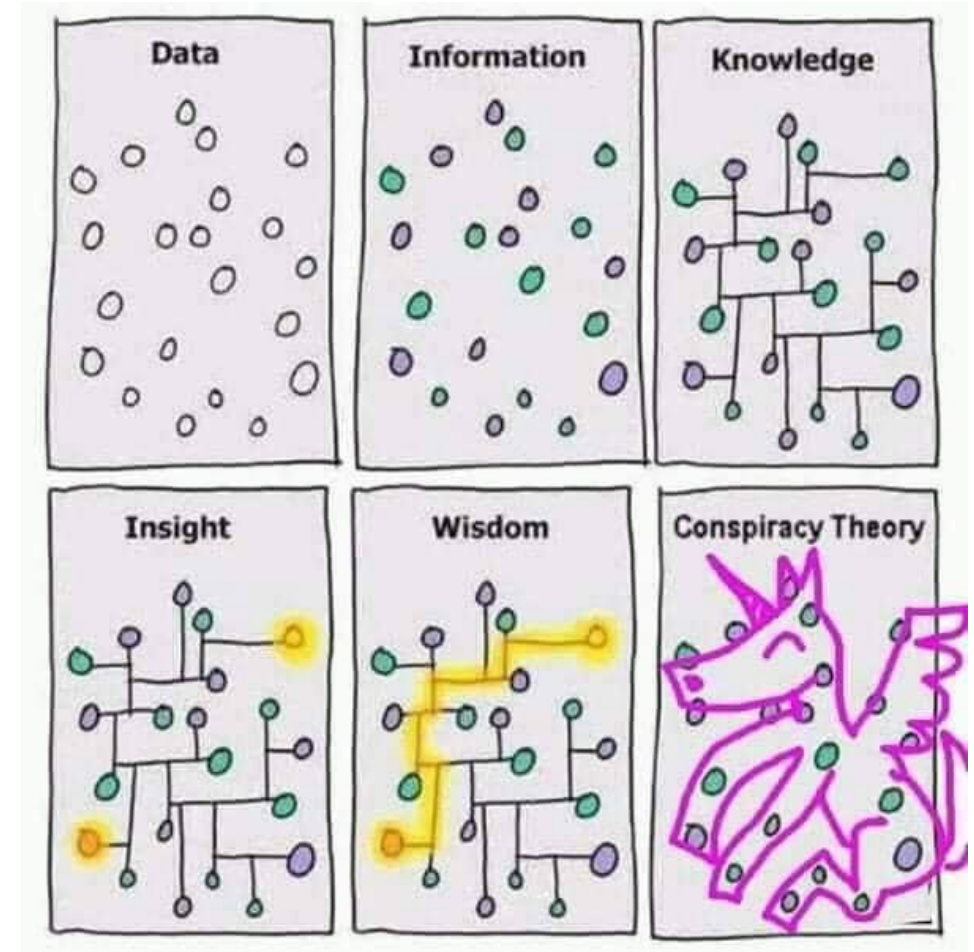


Data visualization: Telling a story with your data

Objectives

- Share useful resources & tips
- Critique examples



Why should we create visualizations of our data? What value does it bring?

- Data visualization
 - A graphic way of communicating results
- Purpose:
 - Brings clarity to the results
 - Communicate findings

Data Visualization Tools

- Infographics
- Placemats
- Dashboards

Infographic

- Creative representation of data
- Images that contains one or more data visualizations on a particular topic
- May include narrative elements

- Tells a story
 - Logical flow
 - Consistent visual styling
 - Visuals over text

- Audience
 - Public documents (e.g., reports, social media posts)

- Software: Canva, Adobe Creative Suite

GENDERED HOMELESSNESS

in Winnipeg

COLLECTED FROM THE 2018 WINNIPEG STREET HEALTH SURVEY

The 2018 Winnipeg Street Health Survey was focused on the health status, housing, and social service needs of people experiencing homelessness in Winnipeg. The data presented here are key findings on gender and 2SLGBTQ+ characteristics and experiences. Participants each have unique combinations of characteristics/identities. The intersection or combination of these characteristics/identities contributes to different experiences.



Overall, these findings are similar to the other surveys on homelessness in Winnipeg in past 10 years and fits with what would be expected in terms of gender breakdown.

* An open-ended question in the survey asked about participant gender identity. The numbers of persons who identified as gender diverse were too small to be included here without compromising confidentiality. So the analyses presented here focus on those who specifically identified their gender as either female/women or male/man.

THE MAJORITY ARE PARENTS

85% 62%
OF FEMALES OF MALES



OVERALL
7.5%
OF PARTICIPANTS REPORT HAVING BEEN SEXUALLY ASSAULTED OR RAPED IN THE PAST YEAR

INJURY AND PHYSICAL ASSAULT

48% OF ALL PARTICIPANTS REPORTED BEING PHYSICALLY ASSAULTED IN THE YEAR PRIOR

WOMEN ARE MORE LIKELY TO BE SEXUALLY HARASSED THAN THEIR MALE COUNTERPARTS



HOWEVER

THERE IS VARIATION IN EXPERIENCES BETWEEN GROUPS (HETEROSEXUAL, 2SLGBTQ+, AND INDIGENOUS/NOT INDIGENOUS)

5X WOMEN ARE MORE LIKELY THAN MEN TO STAY IN A DOMESTIC VIOLENCE SHELTER

MEN ARE **32%** MORE LIKELY TO BE ASSAULTED BY A STRANGER
WOMEN ARE **48%** MORE LIKELY TO BE ASSAULTED BY SOMEONE KNOWN

65% OF ALL PARTICIPANTS REPORTED A DIAGNOSED MENTAL HEALTH DISORDER/CONDITION

26% WERE HOSPITALIZED FOR MENTAL HEALTH REASONS



MOOD DISORDERS

MORE LIKELY IN WOMEN
FEMALES - 53% MALES - 33%

57% OF INDIGENOUS FEMALES 41% OF 2SLGBTQ+ FEMALES
23% OF INDIGENOUS MALES 50% OF 2SLGBTQ+ MALES

ANXIETY DISORDERS

MORE LIKELY IN WOMEN
FEMALES - 63% MALES - 39%

68% OF INDIGENOUS FEMALES 78% OF 2SLGBTQ+ FEMALES
34% OF INDIGENOUS MALES 58% OF 2SLGBTQ+ MALES

POST TRAUMATIC STRESS DISORDER



OVERALL SUBSTANCE USE

81% USED ALCOHOL

22% USED OPIOIDS (HEROIN, OXYCODONES, PENTANYL)

44% USED STIMULANTS (COCAINE, AMPHETAMINES, MATH)

+ 81% OF 2SLGBTQ+ FEMALES USED STIMULANTS **65%** OF 2SLGBTQ+ MALES USED STIMULANTS



IN THE YEAR PRIOR TO THE SURVEY, IT WAS QUITE COMMON TO BE WITH SOMEONE WHEN THEY OVERDOSED (20% OVERALL)

HOPE
END HOMELESSNESS WINNIPEG

WWW.ENDHOMELESSNESSWINNIPEG.CA

TYPES OF HOUSING AND HOMELESSNESS

ABSOLUTE HOMELESSNESS

emergency shelter or domestic violence shelter, car or other vehicle, abandoned building, place of business, or outside

PROVISIONALLY ACCOMMODATED

transitional housing, hotel or motel or boarding home funded by medical services, hospital, jail, treatment program where you live/stay overnight, stayed with a friend, or stayed with a family member

PERMANENTLY ACCOMMODATED

rooming house, own apartment, or house

EXPERIENCES IN THE MONTH BEFORE

participants may have experienced one or more types of homelessness in the month before the study. Stats below are overall.

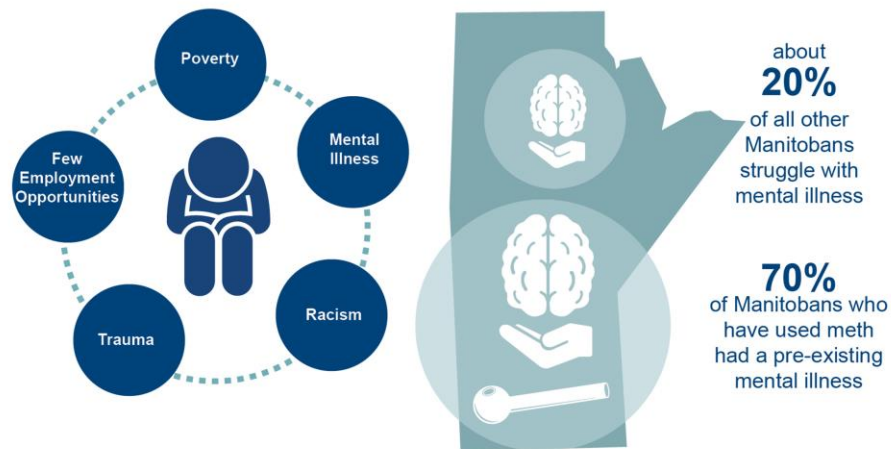
ABSOLUTE HOMELESSNESS **87%**
PROVISIONALLY ACCOMMODATED **82%**

FEMALE (70%)
MALE (73%)

PERMANENTLY ACCOMMODATED **15%**

Meth Use in Manitoba

People who use meth are often faced with many other challenges in their life that lead to poor health and well-being. These individuals are often young adults. Many of them have struggled with mental illness, trauma and poverty. Current systems make it more difficult for them to get the tools and skills they need to thrive.



The rise of meth use in Manitoba

2013

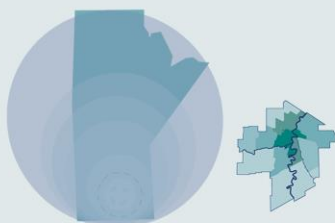
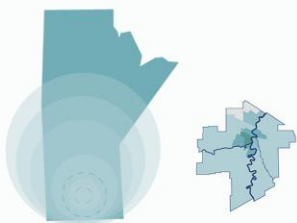


700% increase of first documented meth use

2018



Meth use is increasing in urban and rural Manitoba



Manitoba's Children in the Child Welfare and Criminal Justice Systems



We must do better for our children

We can do better to support families



More preventive policies and services are needed

What gets counted counts



If we want to solve a problem, we first have to know the size of the problem

In accordance with the Truth and Reconciliation Commission Calls to Action, we need to monitor and report on child welfare and youth justice involvement, particularly for Indigenous children and youth, who are over represented in both systems.

Historically, laws were created in Canada to criminalize Indigenous peoples, languages, and cultures.

Today, laws and systems continue to harm Indigenous people and communities.

Data Placemat

- Multiple related visualizations on a single page
- Facilitates discussion and interpretation
- (Preliminary) data with space to write notes
- Accompany with guiding questions

- Audience
 - Meetings to seek feedback from experts /community engagement
 - E.g., data parties
 - Gain consensus on the findings and interpretation



62%
FEMALE



96%
FROM MB
(DOMESTIC STUDENTS)



34%
IN ARTS



22%
FIRST ADMISSION



10%
INDIGENOUS



77%
FULL-TIME



13%
INTERNATIONAL



23
AVERAGE AGE

The University of Winnipeg ENROLMENT SNAPSHOT 2019

UWinnipeg, like many universities across Canada, is experiencing growth in international student enrolments. International students now represent 13% of our student body. International undergraduate students are most likely to be pursuing a degree in the Faculty of Science or the Faculty of Business & Economics, which differs from the overall population of undergraduate students who are most likely to be pursuing a degree in the Faculty of Arts or the Faculty of Science.

9415
UNDERGRADUATE

269
GRADUATE

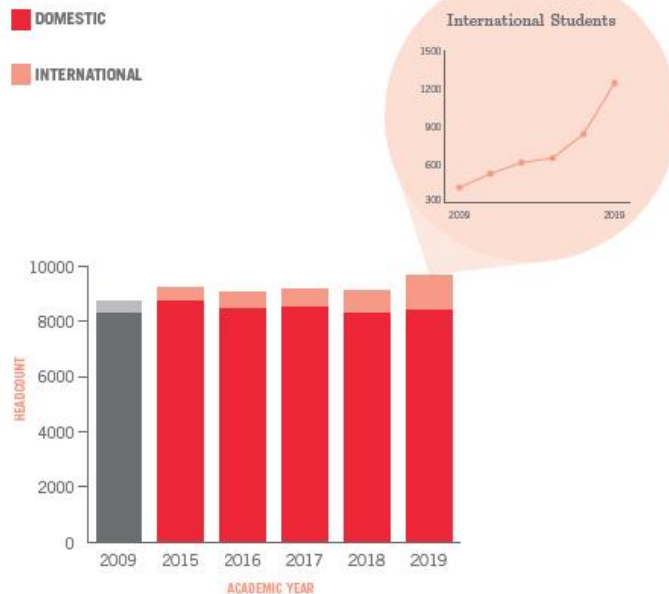
1198
PAGE

185
ELP

433
COLLEGIATE

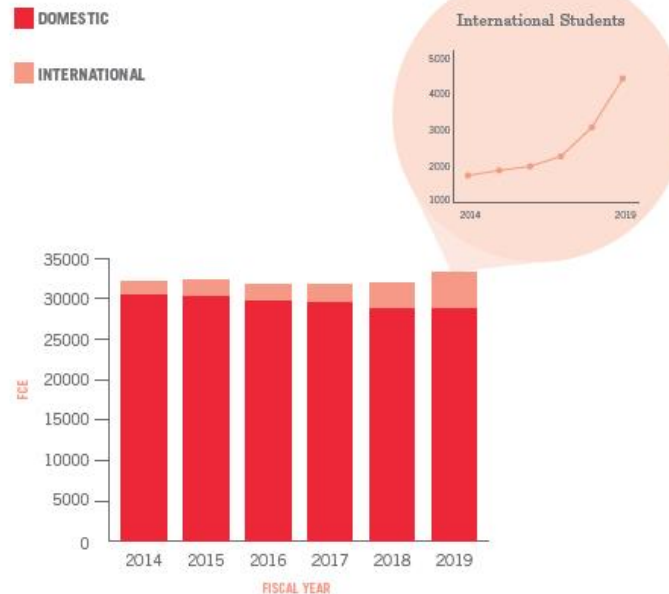
Undergraduate Headcount

International and Domestic



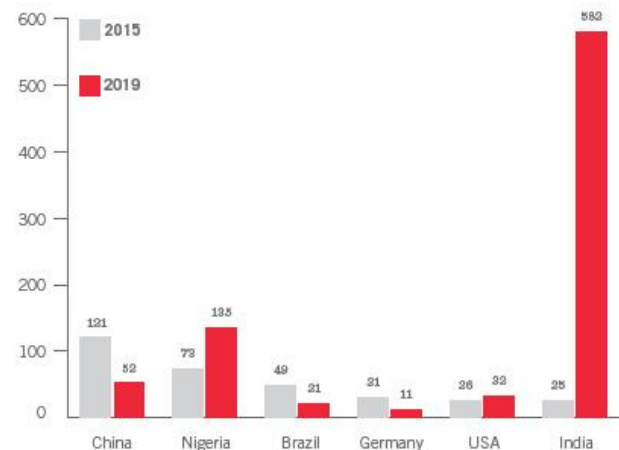
Undergraduate Full-Course Equivalent (FCE)

International and Domestic



International Student Historical Headcount

Top 6 Countries of Origin in 2015 with 2019 comparison



TOP 3 INTERNATIONAL UNDERGRADUATE STUDENT MAJORS

- 29.6%
BUSINESS AND ADMINISTRATION
- 22.8%
APPLIED COMPUTER SCIENCE
- 8.3%
BIOLOGY

Diversity in our student body is having a positive impact on classroom discussions, because when our dialogue is informed by a diverse range of perspectives, we gain a broader view of the world.

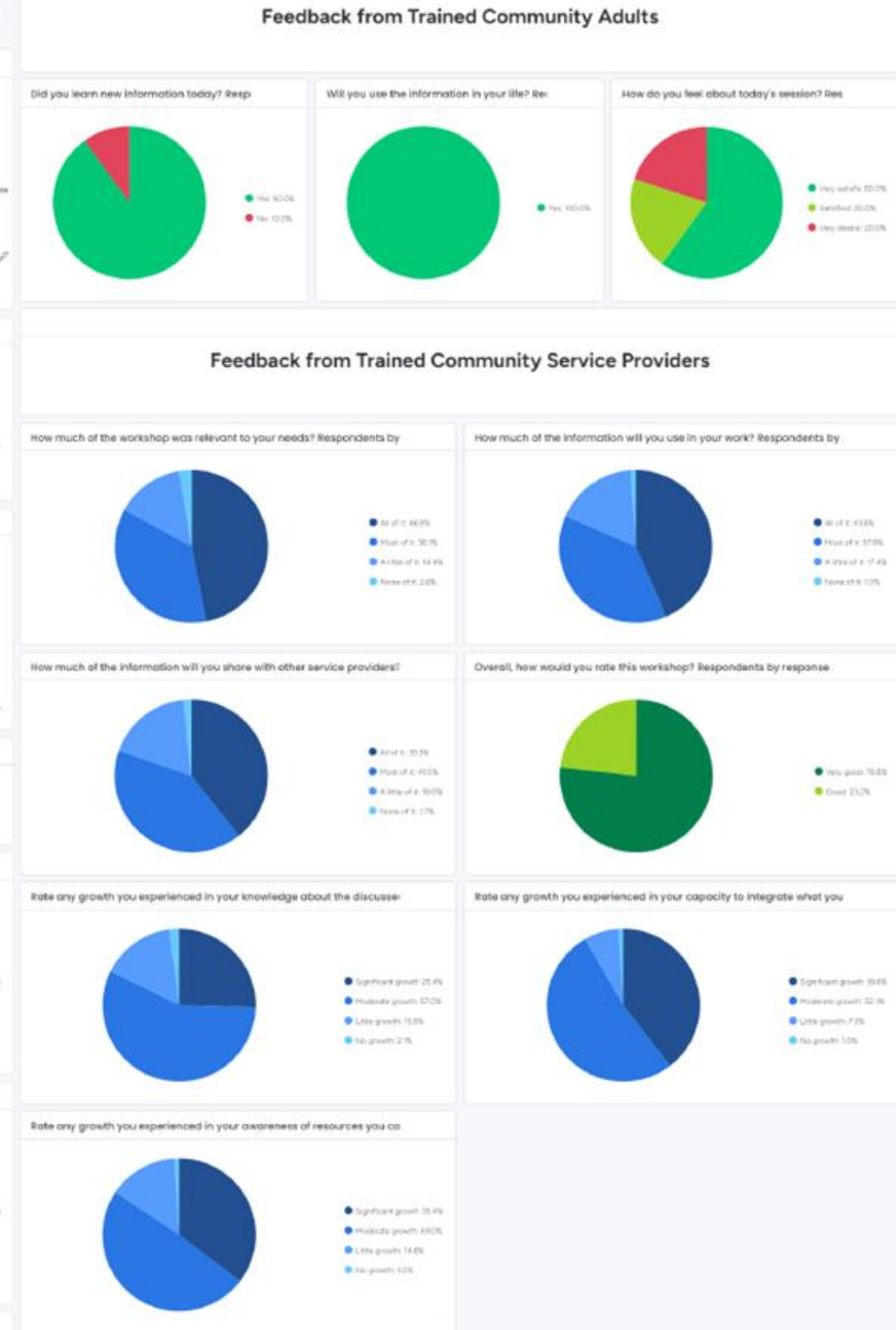
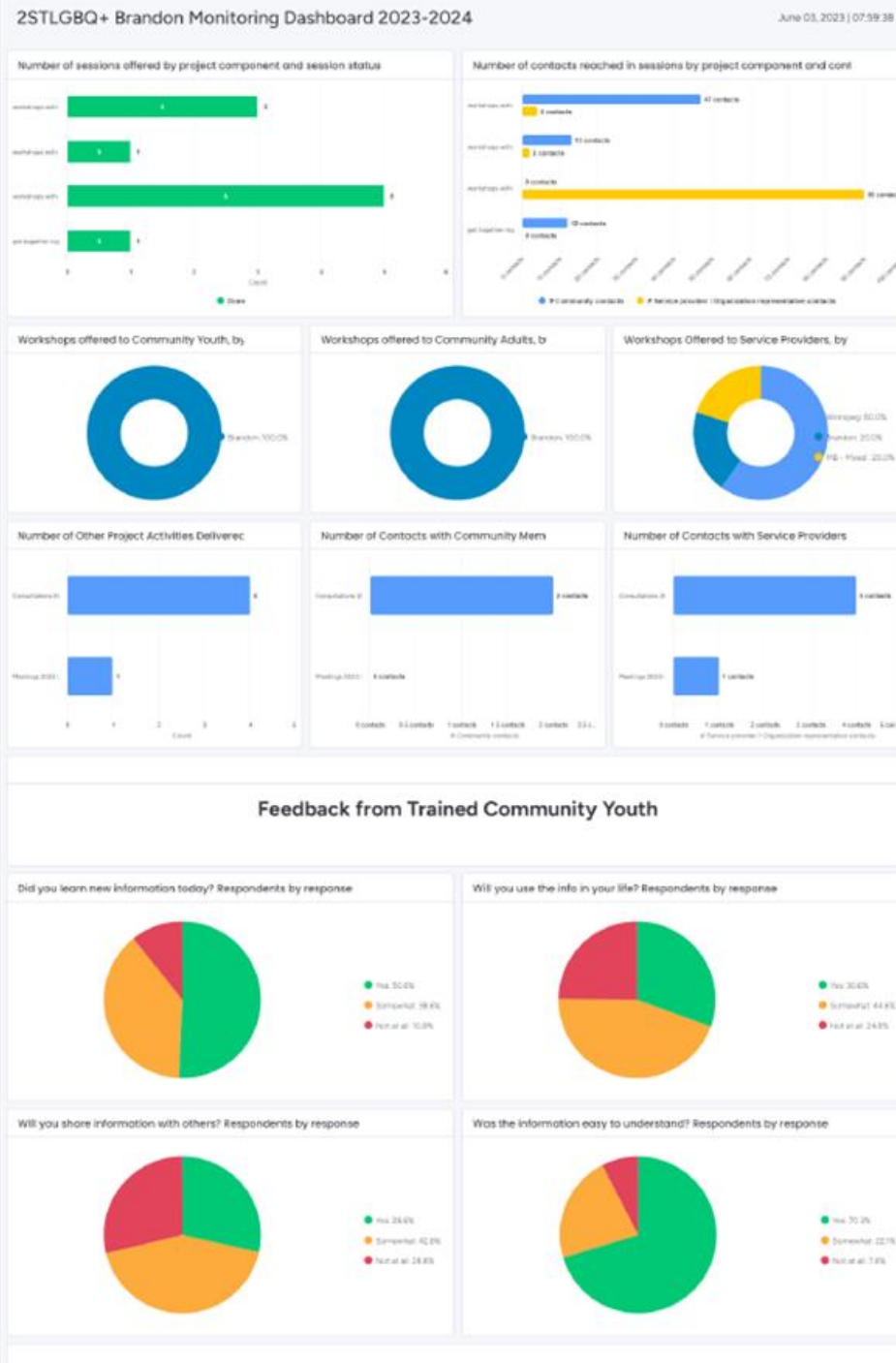
Dr. Arnette Trimbee
2019 State of the University Address

Dashboards

- Real-time information
 - Automated updates
 - Displays key metrics and performance indicators (on one screen)
 - Group similar information
 - Useful for data monitoring/tracking and decision-making
 - Identifying trends and patterns
 - Interactive, dynamic elements (e.g., filters, drill-down functions)
 - Often web-based
 - May need to provide training on how to use the dashboard
 - Lacks narrative explanation (or reflection)
-
- Audience
 - Internal (or external) to an organization (supports improvement)
 - Software: Tableau, PowerBI, Yellowfin

SERC's Brandon 2STLGBQ+ Project Dashboard

Automatically fed
with project stats
entered by staff and
feedback provided by
session participants



Infographics



Best For:

- One-time storytelling
- Public communications
- Executive summaries

Resources Required:



High initial design effort
Minimal maintenance

Distribution Methods:

- Print materials
- Digital platforms
- Presentations

Data Placemats



Best For:

- Client engagement
- Collaborative analysis
- Interim findings

Resources Required:



Moderate setup time
Periodic updates

Distribution Methods:

- In-Person/virtual meetings
- Email
- Collaborative platforms
(e.g., Teams)

Dashboards



Best For:

- Ongoing monitoring
- Interactive exploration
- Regular reporting

Resources Required:



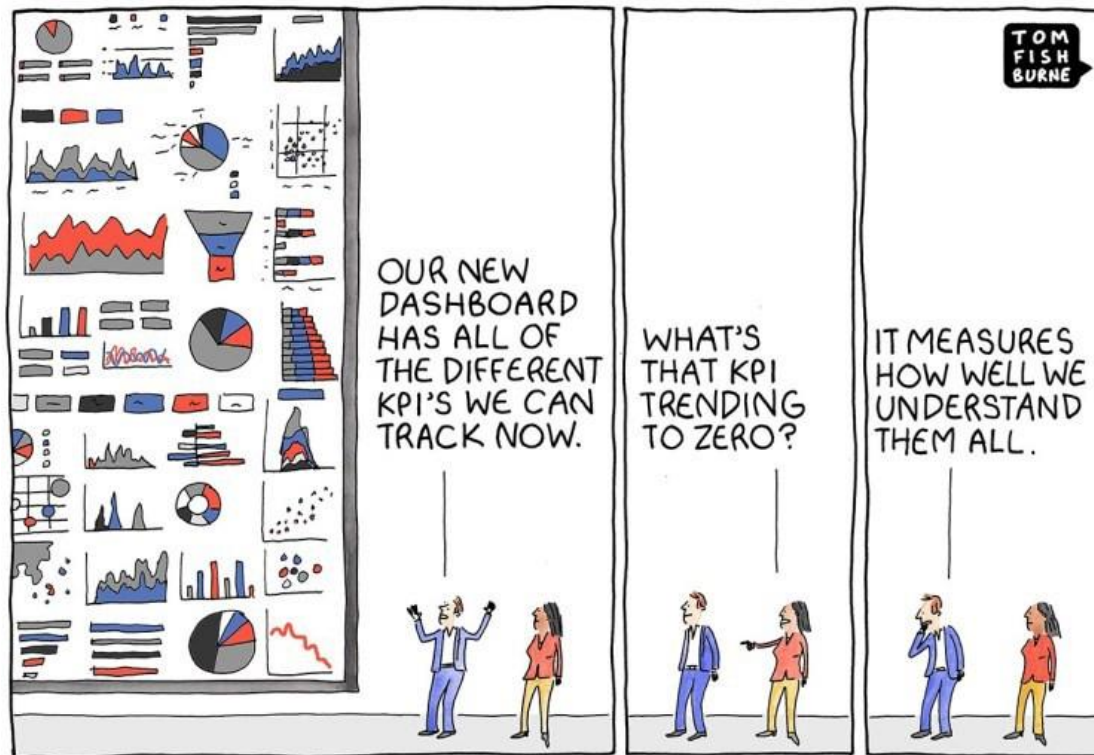
High technical expertise
Ongoing maintenance

Distribution Methods:

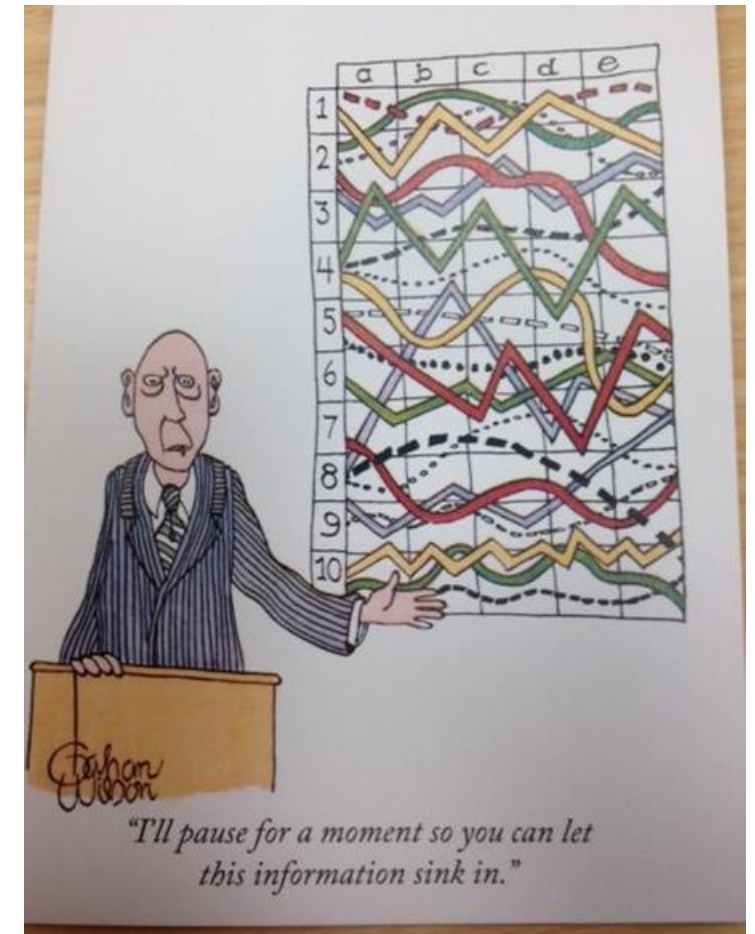
- Internal portals
- Web applications
- Regular reports

Have you been in these situations before?

- [Presenting Data Effectively](#)
- [C is for Contrafibularity](#)



© marketoonist.com



<https://www.pinterest.ca/pin/161707442840573499/>

Reporting Data

How are you reporting information? Have you contextualized it?

- Avoid reductionist findings/blame/pathologizing
- Do not report in ways that reinforce stereotypes and harm people
- Present data so it can be understood in the broader social context of systemic racism and appropriately attribute inequities to their root causes

Recommendations

- Name forces of oppression, such as racism directly in the chart title and subtitles
- Use people-first language and reference people's experience, not language that dehumanizes or references skin colour and static descriptions
 - (e.g., write "People Living with Disabilities" and "People who are Incarcerated" and NOT "Disabled" or "Inmates")
- Question assumptions
 - (e.g., For some, thumbs up and thumbs down may clearly represent "yes" and "no". That may not be the case in other communities.)

["Do No Harm Guide: Applying Equity Awareness in Data Visualizations"](#)
by Schwabish & Feng (2021)

2024 Winnipeg Street Census

Housing instability is not random – it's rooted in systemic inequality.

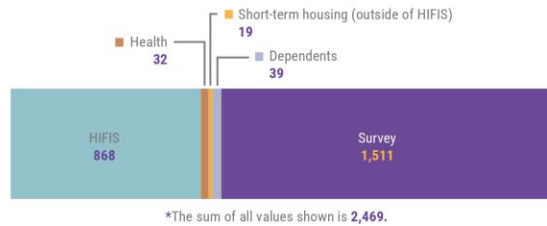
End
Homelessness
Winnipeg

The 2024 Winnipeg Street Census or Point-in-Time (PiT) Count identified 2,469 unsheltered individuals in Winnipeg on November 5th, 2024.

The PiT Count occurred between November 6th and 12th, utilizing survey and administrative data. The survey was administered by more than 160 volunteers and staff along designated routes, at service provider locations, and in encampments whereas the administrative data was obtained from the Homeless Individuals and Families Information System (HIFIS), Winnipeg Regional Health Authority, and a transitional housing program yet to be onboarded onto HIFIS. This federally funded initiative is coordinated by End Homelessness Winnipeg, and is supported by lived experts, local government representatives, staff at community organizations, and academics. This summary highlights some of the findings.

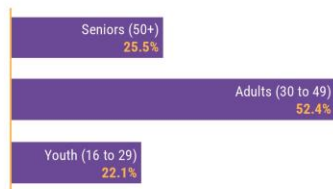
At Least 2,469 People Are Estimated to Have Experienced Homelessness in Winnipeg on November 5, 2024.

The Size of the Population Experiencing Homelessness:



Homelessness Has No Age Limit.

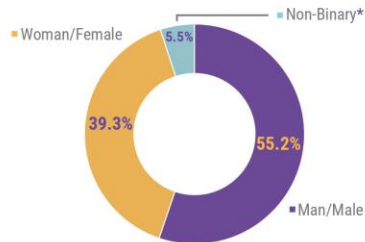
Age Group, Average Age is 41:



*2.9% of the respondents are 65+ years old.

Homelessness Knows No Gender.

Gender Identity:



*Non-binary includes Two-Spirit, Trans Woman, Trans Man, Queer, Indiqueer, Gender fluid, Questioning, Gender non-conforming, Agender, Pangender, Intersex, Demiboy, and Demigirl.

Homelessness Isn't Equal.

Indigenous Identity:



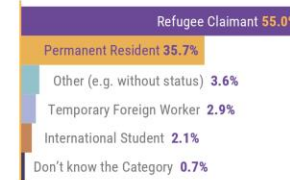
*Indigenous peoples made up 79.9% of those who experienced homelessness on November 5, 2024—a powerful reminder of ongoing systemic inequities.

2024 Winnipeg Street Census, cont.

Housing instability is not random – it's rooted in systemic inequality.

12.9% of Those Who Experienced Homelessness Are Newcomers to Canada.

Arrival Category:



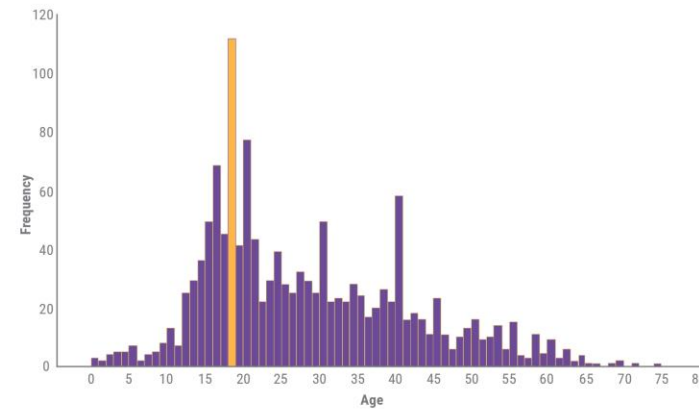
Where People Stayed on The Night of the Count.

Current Housing Situation:
(Based on 1,511 Survey Respondents)



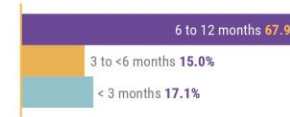
Homelessness Can Begin at Any Age – Most Commonly at 18.

Age at First Experience of Homelessness:



More Than 50% Experienced Homelessness for 6+ Months.

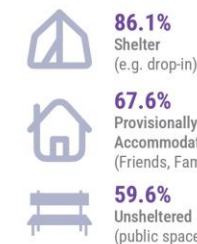
Length of Time Experienced Homelessness in the Year Prior to the Survey:



* Experiencing homelessness for longer than 6 months is recognized as Chronic Homelessness.

Unstable Housing.

Places Stayed Overnight in the Past Year:



86.1%
Shelter
(e.g. drop-in)

67.6%
Provisionally
Accommodated
(Friends, Family)

59.6%
Unsheltered
(public space)

* Respondents may have stayed in multiple places so the total percentage does not sum up to 100%.

87.1% of the respondents were born in Canada and 12.9% arrived as an immigrant, refugee, refugee claimant, or through another process. Among those who came to Canada, more than half (55%) were a refugee claimant.

Some individuals were in their own homes on the night of the count, but reported their housing was unsafe or not permanent, meeting the criteria for inclusion.

Unsheltered locations included living in a public space, encampment, or vehicle. Shelters included emergency shelters and domestic violence shelters. Provisionally accommodated locations include hospitals, jail/prison/remand centre, transitional housing, and couch surfing. Permanently accommodated includes one's own home/apartment.

Data shows that individuals first experience homelessness at any age, but the most common age is 18 years old.

Two-thirds of the respondents experienced homelessness for more than half a year. In fact, more than 50% experienced homelessness for the entire year.

Respondents stay in various (types of) places in a short period of time. Thus, there is a lot of mobility, which has implications for intervening and providing services.

2024 Winnipeg Street Census, cont.

Housing instability is not random – it's rooted in systemic inequality.

End
Homelessness
Winnipeg

Almost half of the respondents were involved in the child welfare system as a child or youth. This suggests that the child welfare system is a pathway into homelessness (either immediately when they exit the system or later).

More than half of the respondents would have met the definition of homelessness (i.e., not permanently accommodated) when they exited the Child and Family Services (CFS) system.

The high use of healthcare suggests there are opportunities to intervene since the healthcare system is a point of contact. As well, there may be cost savings and resource saving opportunities for the healthcare system if investments are made to provide appropriate housing for folks (with wrap around supports). Also, hospitals need to end the practice of discharging patients to shelters or unsheltered locations.

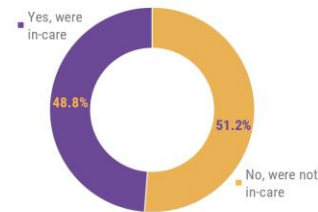
Why Are People Losing Housing?

Top 5 Reasons:
(Multiple Responses were Possible)

1. **Not enough income** (e.g., loss of benefit, income or job) **(32.6%)**
2. **Eviction** **(16.9%)**
3. **Substance use issue** **(16.3%)**
4. **Conflict with a spouse or partner** **(14.0%)**
5. **Discrimination** **(10.8%)**

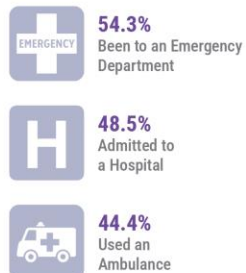
Child Welfare – A Common Pathway to Homelessness.

Were in Foster Care, Kin Care, or a Youth Group Home as a Child or Youth:



The Healthcare System is a Major Pathway to Homelessness.

Healthcare utilization in the year before the survey:



Among those who were ever in-care, more than half (52.0%) were in-care around their 18th birthday.

More Than Half Without Permanent Homes Within 3 Months of Leaving Care at 18.

Places Stayed:
(Multiple Responses were Possible)



No Home to Return To: Hospital Discharge Destinations Tell the Story.

Places they stayed upon being discharged from the hospital in the year prior to the survey:
(Multiple Responses were Possible)



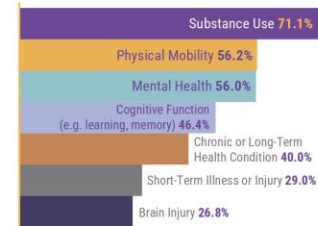
2024 Winnipeg Street Census, cont.

Housing instability is not random – it's rooted in systemic inequality.

End
Homelessness
Winnipeg

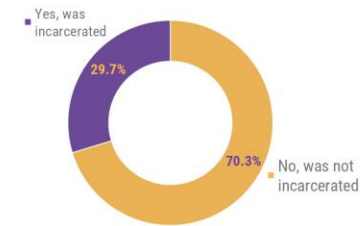
Not Just Struggling –Systemically Unseen.

Difficulties with... :



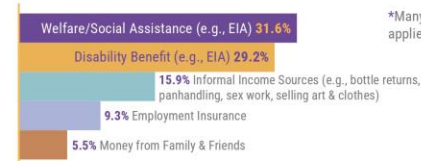
Justice Involvement Shouldn't End in Homelessness.

Incarcerated in the year prior to the survey:



Fragmented Income, Persistent Homelessness.

Top 5 income sources:
(Multiple Responses were Possible)



*19.4% of the respondents indicated they had no sources of income.

*Many of the respondents (85.9%) had applied for EIA at some point.

Affordable Housing, Income, and Support: What People Say They Need to Find a Home.

Top 5 things that would help people find permanent, stable housing:
(Multiple Responses were Possible)

1. **More Affordable Housing** **(82.1%)**
2. **Housing Subsidy or Benefit** **(71.2%)**
3. **More Money from EIA or Manitoba Supports for Persons with Disabilities** **(67.7%)**
4. **Mental Health Supports** **(66.1%)**
5. **Housing with Supports** (healthcare, mental health, and addiction support services) **(57.9%)**

*93.2% of the respondents were interested in obtaining housing.

Individuals are often released from the justice system to shelters or unsheltered locations, highlighting an urgent need for policy change to prevent this practice. It is crucial to recognize there are many complex reasons why someone may become involved with the justice system. Our study did not inquire about the nature of any charges, respecting the dignity and privacy of those affected.

Individuals experiencing homelessness have needs that must be considered in supporting them. For example, there are accessibility considerations (e.g., physically being able to go places, need for accommodations in housing/ service provider locations like handrails, ramps). Also, services/programs need to be low barrier and non-judgemental for folks, particularly for individuals who use substances. The results speak to the high need for safe consumption sites, and detox and treatment facilities, as well as the ongoing supports folks will need to maintain housing.

The cost of housing and mental health are huge barriers to finding and maintaining housing. Thus, strategies to address homelessness should prioritize increasing income supports, developing barrier-free low-income housing, and increasing culturally appropriate mental health and addiction supports.

Resources for Choosing a Graph

- [Presenting Data Effectively](#)
 - includes Quantitative Chart Chooser & Data Visualization Checklist
- [Qualitative Chart Chooser – Stephanie Evergreen](#)
- [Data Viz Project](#)
- [Data Visualization Catalogue](#)
- [Visualizing Percentages & Parts of a Whole](#)
- [Visualise data - Rainbow Framework](#)

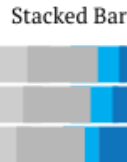
When a Single Number is Important



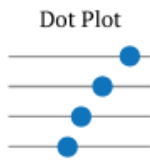
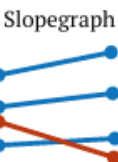
Quantitative Chart Chooser 4.1

by Stephanie Evergreen

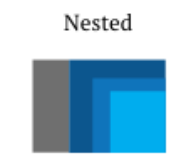
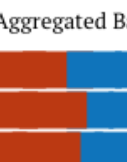
When there are Parts of A Whole



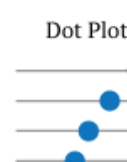
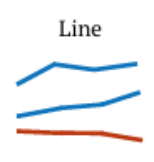
How 2 + Numbers are Alike or Not



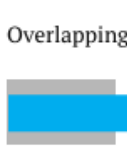
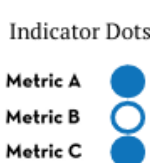
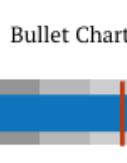
What the Survey Says



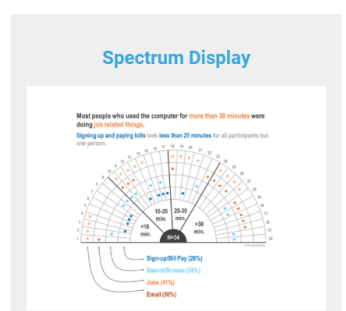
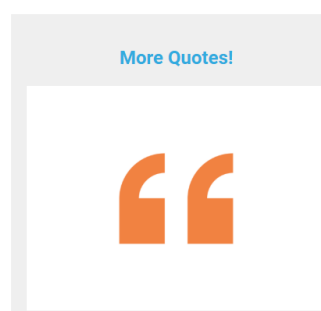
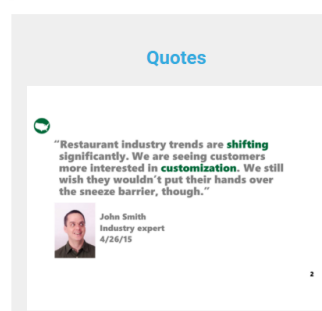
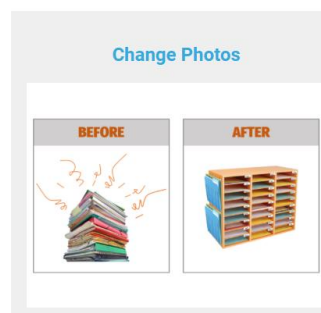
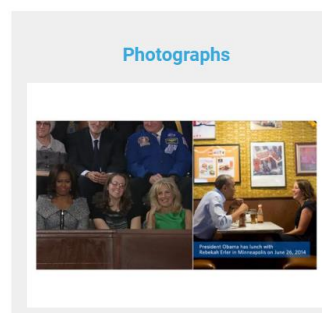
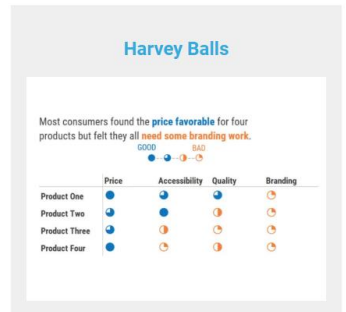
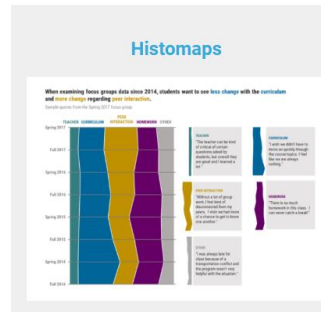
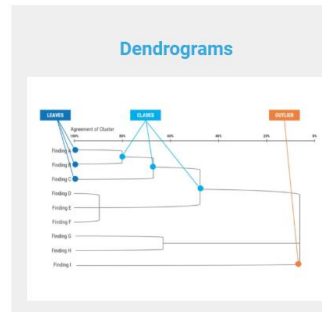
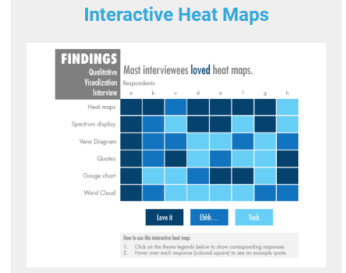
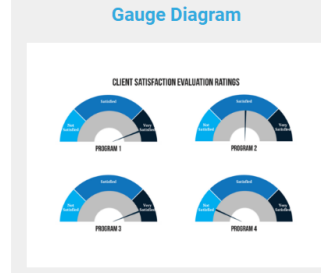
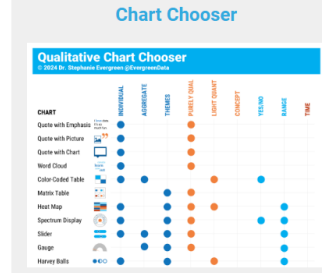
Hey, Things Changed Over Time



How we are Better or Not than a Benchmark

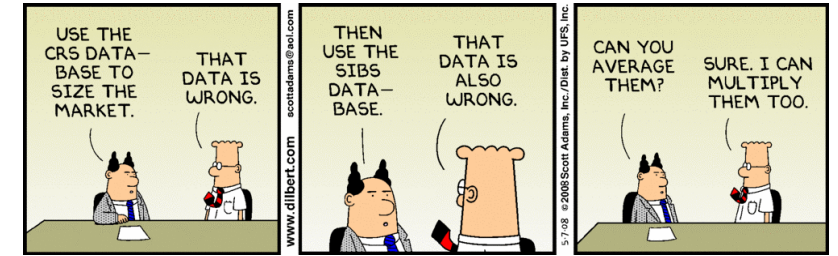


Qualitative Data Visualization Options



What are some things you consider when graphing your data? What makes a 'good' visualization?

Design Elements



- **Data**

- Should be current, reliable, simplified
- Include reference points

- **Icons & graphics**

- Quickly identified and communicated
- Consider size, colour, 2D vs 3D
- Remove unnecessary information

- **Colour**

- Evokes emotion, use strategically
- Use grey & white to de-emphasize
- Use few colours
- [Don't use red-green](#)
- Use negative space

- **Font**

- Use simple, easy to read fonts
- Be consistent
- Use colour or size to emphasize

- **Text**

- Keep it simple

- **Arrangement**

- [Rule of thirds](#)
- Flow
- Story

- **Don't use the default formatting**

- **Reduce the clutter**

- [Example](#)

Pitfalls

- **Too much information**
 - Can overwhelm the audience and obscure key messages
- **Overcomplication**
 - Too many elements or metrics can make visualizations difficult to interpret
- **Missing context**
 - Not providing background information can lead to misinterpretation
- **Underestimating resource demands**
 - Underestimating the time (and expertise) needed to create visualizations

Resources for Formatting Graphs

- [7 tips for Better Data Visualization](#)
- [Stephanie Evergreen's Blog & Books](#)
- [Ann Emory's Depict Data Studio](#)

Resources for Creating Visualizations

- Colours

- [Colour Wheel](#)
- [Color Brewer](#)

- Icons

- [Noun Project](#)
- [freepik](#)
- [Flaticon](#)
- [Vector Stock](#)
- [Dreamstime](#)

- Word Art/Clouds

- [Word Art](#)
- [Word It Out](#)
- [Word Clouds](#)

- Creating infographics

- [infogr.am](#)
- [Piktochart](#)
- [Gephi](#)
- [Gliffy](#)

Canva

Analyzing & Visualizing Data and Creating Dashboards

- [Power BI](#)
- [Tableau](#)

[Others...](#)

Inspiration

- <https://www.visualisingdata.com/>
- <http://selection.datavisualization.ch/>
- <https://d3js.org/>
- <https://www.reddit.com/r/dataisbeautiful/>
- <https://informationisbeautiful.net/>

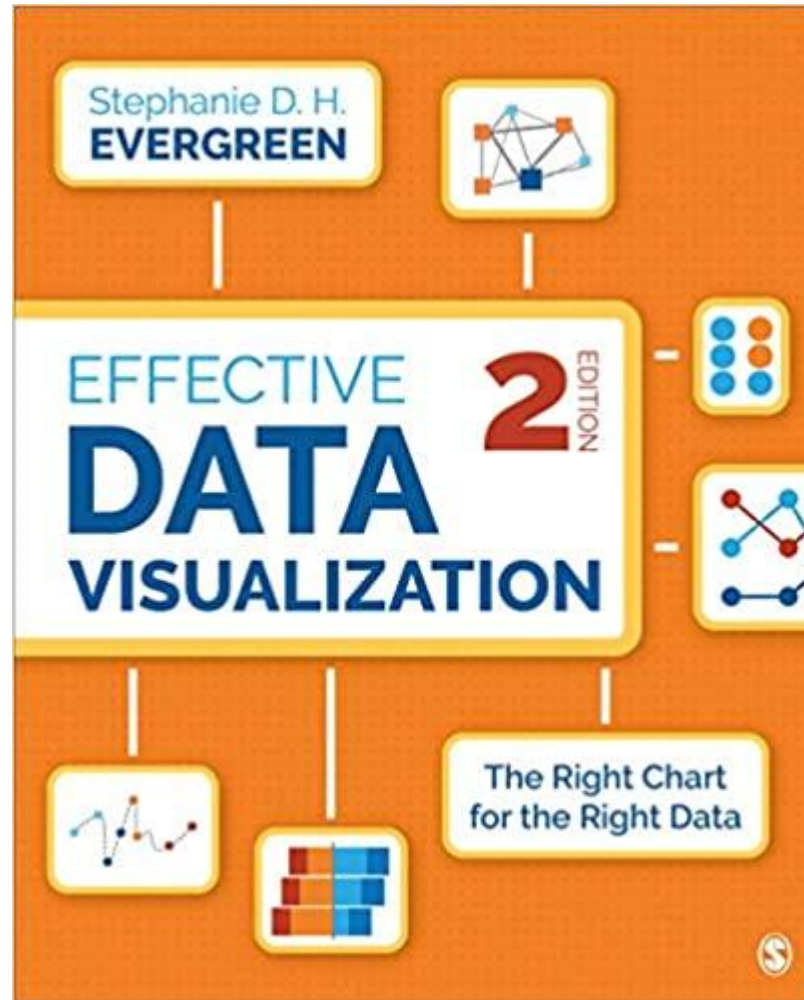
- <https://www.youtube.com/watch?v=5Zg-C8AAIGg>
- <https://www.youtube.com/watch?v=usdJgEwMinM>

Indigenous Data Visualization

- <https://indigenousdatatoolkit.ca/>
- <https://altvis.github.io/papers/2025/OjibweVis.pdf>
- https://jmde.com/index.php/jmde_1/article/view/783/729
- https://www.youtube.com/watch?v=5gYB_7P0zIA

- <https://arts.mit.edu/projects/amazonian-calendars-indigenous-data-visualizations/>
- <https://stephanieevergreen.com/decolonizing-data-viz/>

Book Recommendation



Activities

What are some problems with these data visualizations?
How would you present this information?

Figure 5: Typical locations accessed for food



n = 405; Missing = 1

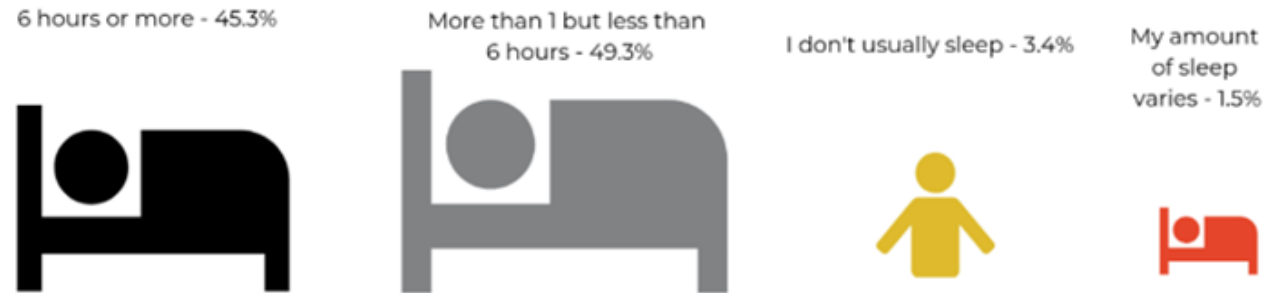
Places accessed for food in the past month
(people could select multiple places)



n = 405; Missing = 1

<https://endhomelessnesswinnipeg.ca/wp-content/uploads/2018-Winnipeg-Street-Health-Survey-Fact-Sheet-4-Daily-Life-Final.pdf>

Figure 7: Usual number of hours of sleep per night/day



n = 386; Missing = 20

<https://endhomelessnesswinnipeg.ca/wp-content/uploads/2018-Winnipeg-Street-Health-Survey-Final-Report.pdf>

How does interest in an evaluation career differ across attendee types?

How would you visualize these results?

1. Did you attend the Institute as (please select one) - Selected Choice * 13a. How likely are you to work in (the field of) evaluation in the future? Crosstabulation

Count

		13a. How likely are you to work in (the field of) evaluation in the future?				Total
		Very unlikely	Somewhat unlikely	Somewhat likely	Very Likely	
1. Did you attend the Institute as (please select one) - Selected Choice	An undergraduate student	5	1	2	0	8
	A community member/agency representative	0	2	3	1	6
	Another role (please specify)	0	0	0	1	1
	A graduate student	1	2	10	3	16
Total		6	5	15	5	31



- What challenges or barriers will you face in creating visualizations for your data?
- What resources or tools would be helpful?