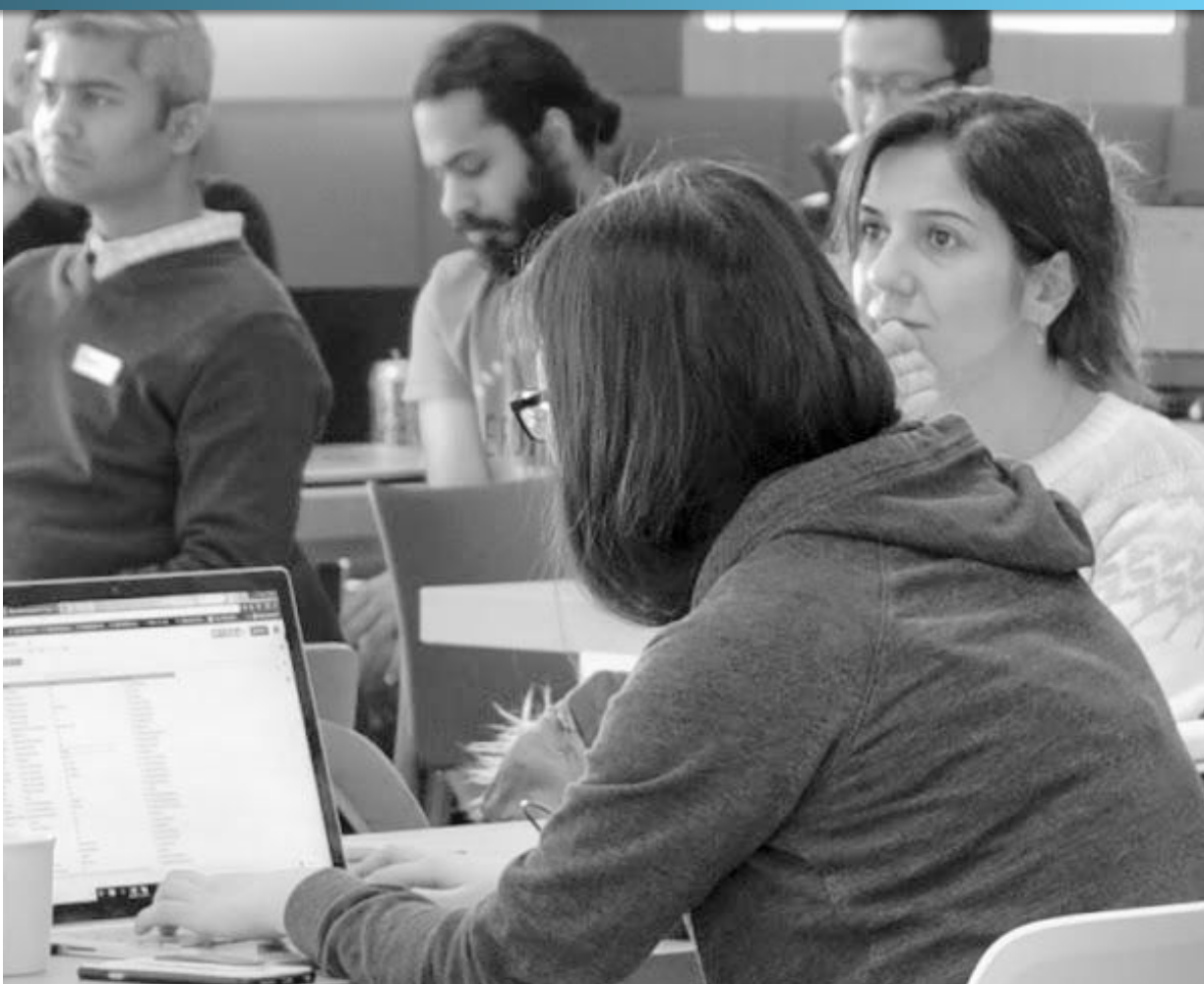




REPORT FOR YW

Kitchener-Waterloo



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Executive Summary

The YW of Kitchener-Waterloo (**Feminist Shift**) benefits from understanding local issues through a gendered lens in order to drive advocacy and programming to support its mission of improving the lives of women and girls. With this goal in mind, the **Feminist Shift** partnered with Data for Good Waterloo Region to uncover relevant regional data-driven insights.

Please note that this analysis was done prior to the COVID-19 pandemic, and the economic condition of women may change substantially as a result of recent events. Future market uncertainties may continue to impact outcomes, and it is possible not all analysis in this report will remain relevant.

One main component of the datathon even focused on analyzing census information to examine the economic well being of women in the region, relative to Canadian benchmarks as a whole. Participants found evidence that while female income and employment were improving, there was still work to be done, and certain communities struggled or lagged behind in tackling low income among women.

Key findings include:

- **Women are under-represented in the labour market:** while 74% of men in Waterloo Region are actively working or looking for work, only 66% of women (above 15) are doing so.
- **Family responsibility plays a big role:** the proportion of women inactive in the labour market due to personal or family responsibility (37%) is 3.1 times higher than the proportion of men (12%). This may be deterring women's opportunity to excel in their career as they are not able to contribute the same time and resources as a full time male colleague.
- **The income gap is closing:** while the income gap between men and women across Canada has remained stable for the last two decades, in KW it has continued to close, even while men's income increased over the same period. Median income for both men and women was higher in KW than the national amounts.
- **Key areas are high risk for poverty relative to benchmarks:** Certain areas, even with education, age, and other demographic factors accounted for, remain at very low income levels. These areas require attention. Some clusters have unique challenges that must be addressed.
- **Key poverty areas** for women in Waterloo Region were identified as:
 - The N2C forward sortation area (FSA) (neighbourhood around Fairview mall)
 - N2G FSA (neighbourhood around Downtown Kitchener)

Additionally, topics of sexual assault allegation processing and justice system outcomes were investigated. The analysis showed that changes made by the Waterloo Regional Police Service are moving the needle in the right direction, but change is slow, and sexual assault continues to be a significant issue in the region.

Key findings included:

- **Sexual Assault in Waterloo Region is a gendered crime:** In Ontario in 2018, women were 7.7 times more likely to be victims of a sexual assault. In the Waterloo region in 2018, males represented 98% of all adult charges for sexual assault.
- **Waterloo Region is over-represented in sexual assault allegations:** Waterloo region sexual assault incidence rate per population is higher than the national average and the provincial average, with 123 crimes per 100K population in 2018. Sexual violation allegations take longer to clear in Waterloo region as well, with 55% of all sexual violation allegations in 2018 not cleared at date of reporting, compared to 39% for both Ontario and Canada overall.
- **Waterloo Regional Police Service is receiving and investigating more sexual violation allegations than before:** The rate of unfounded sexual violation allegations have dropped from 19% in 2014 to 5% in 2018, while the total number of allegations brought to the police have increased. While WRPS has introduced new training and processes, a significant change in definitions and reporting methodology introduced by Statistics Canada in 2017 played a big role in this drop. Overall, sexual allegations - and especially sexual assault - continue to see higher unfounded rates and lower rates of charge than the comparable crime of assault.
- **The rise in the rate of sexual violation investigations has not led to a rise in the rate of charges.** This can be due to the length of police investigations, or due to ineffectiveness of recent changes. Current data is insufficient to judge whether rate of sexual violations charges is increasing in the region, and we recommend this research be revisited after a sufficient amount of data is available.
- **Increased numbers of sexual assault cases are being brought to court:** While sexual assault cases from 2012 to 2017 represented only 0.5% of all cases seen by the Kitchener court, the rate has risen to 0.8% in 2018 and 1.2% in 2019, similar to the growth in Southwestern Ontario rate.
- **Recently, more sexual assault cases take longer to be resolved:** Since 2018 more cases are pending than resolved in the Kitchener court, while from 2012 to 2017 more cases were resolved than pending.
- **More sexual assault cases end with a guilty charge:** Kitchener consistently shows a higher proportion of guilty cases in conjunction with a lower proportion of withdrawn cases compared to Ontario overall.

Introduction

For over 160 years, the YW has been advocating for women's access to housing, education, and safety. Currently the world's oldest operating women's rights organization, the YW - historically Young Women's Christian Association (YWCA) - maintains centres in over 125 countries and assists more than 25 million women globally.

On a grassroots level, 32 YWCA centres in Canada run the largest national emergency shelter and housing program for women, and act as the second largest provider of child care in the country. In 2018 alone, YW Kitchener-Waterloo (YWKW) offered 80,000 overnight stays, and a further 20,000 motel nights to women in need of alternative housing. To date, YWKW has provided hundreds of children with various after-school and childcare programs, and has branched out to offer entrepreneurship support for women looking to start businesses.



Despite YWKW's incredible efforts, women in the Region of Waterloo still encounter substantial difficulty in finding housing, childcare, and work. For this reason, the organization continues to conduct research, advocacy, and program development focused around housing, poverty, and childcare.

In 2019, YWKW received a Status of Women grant to develop and deliver a four-year, community-based advocacy project called **The Feminist Shift** to raise awareness of, and reduce, gender-based violence. Multiple studies^{1,2}, have shown that issues of poverty, employment, and income are intertwined with gender-based violence. Women who are victims of abuse are more likely to experience economic consequences such as disruptions in earnings, reduced income, or loss of time at work. They are also substantially more likely to need emergency housing.

To support these efforts and important public research projects, YWKW partnered with Data for Good's Waterloo Region chapter in November 2019 to determine how the organization could better understand poverty, employment, and sexual assault in Waterloo region through a gendered lens. Over 60 data scientists, analysts, actuaries, and other professionals came together to analyze public datasets related to these issues, along with information released by the Waterloo Regional Police Service. This report forms a summary of the research and analysis, and includes key insights unearthed during the datathon.



¹ Lloyd, Susan. "The Effects of Domestic Violence on Women's Employment." Wiley Online Library. December 16, 2002. Accessed April 2020. <https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9930.00025>

² Loya, Rebecca M. "Rape as an Economic Crime: The Impact of Sexual Violence on Survivors' Employment and Economic Well-Being." Journal of Interpersonal Violence. November 6, 2014. Accessed April 2020. <https://doi.org/10.1177/0886260514554291>

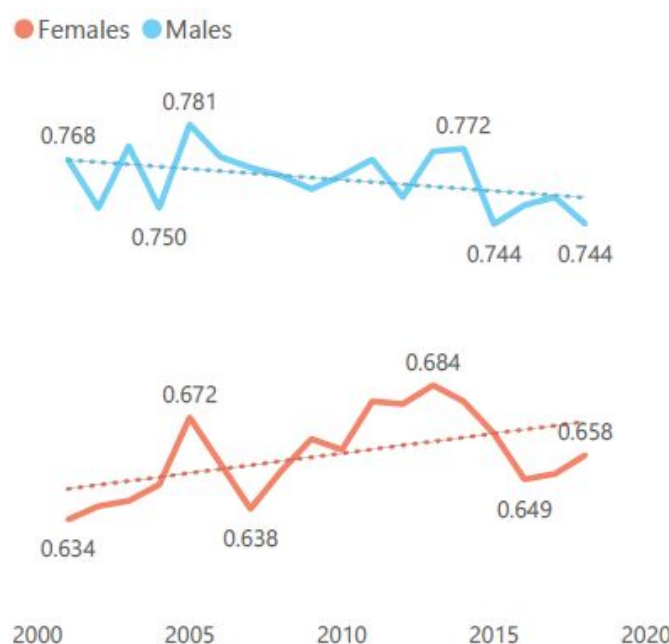
Employment

Statistics Canada's 2018 report on *The Economic Well-Being of Women in Canada*³ provides an excellent overview of the employment context women have been facing over the past decades. "Historically," the report claims, "Women's financial security has been closely tied to their familial relationships...as the labour force participation of women, particularly wives and mothers of young children, has increased since the 1960s, so has their role in their own economic well-being and that of their families."

Labour Force Participation

Across Canada, an increasing number of women have been looking for, and finding, work over time. In 2001, only 59.4% of working age women (15 and above) were actively working or looking for work, compared to 72.3% of men. By 2019, male workforce participation had decreased to 69.6%, while the female participation rate had increased to 61.3%.⁴

Figure 1: Labour Force Participation Rates by Gender in Kitchener-Waterloo



³ Fox, Dan and Melissa Moyser "The Economic Well-Being of Women in Canada." Women in Canada: A Gender-based Statistical Report. Statistics Canada. May 16, 2018. Accessed May 2020.

<https://www150.statcan.gc.ca/n1/pub/89-503-x/2015001/article/54930-eng.htm>

⁴ Statistics Canada. Table 14-10-0096-01 Labour force characteristics by census metropolitan area, annual <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410009601>

Improvements in female labour force participation can also be seen across the Kitchener-Waterloo (KW) region, although male labour force participation declined from 77% to 74% within a 17 year period. In total, 66% of KW-based women above the age of 15 are participating in the workforce as of 2018 - a 3% increase since 2001.⁴

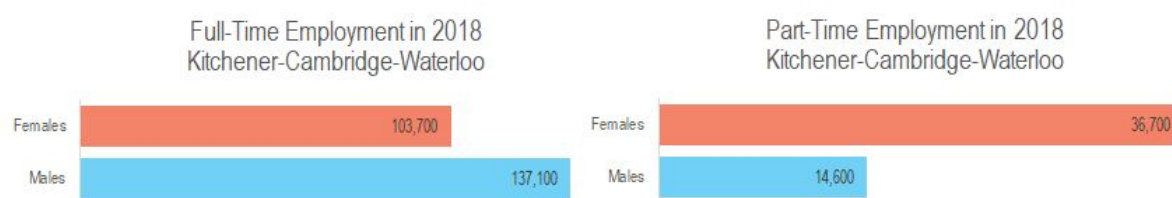
While the trend shows the participation gap is closing, results reveal that even today, fewer women participate within the labour force than men. There still remains an 8% lower rate of women in the labour force.

TAKE AWAY: In terms of labour force participation, more women in KW are looking to be employed vs. the Canadian average. However the gap remains high at 8% between men and women.

Hours of Work and Hours Lost

Women in KW also tend to be working part time: in 2018 25% of employed women held part-time positions, compared to only 9% of men. In fact, women hold 72% of all part-time positions filled, which is higher than the Canadian overall (for 2019) of women holding 64% of all part-time positions.⁵

Figure 2: Labour Force by Gender, Full-Time compared to Part-Time

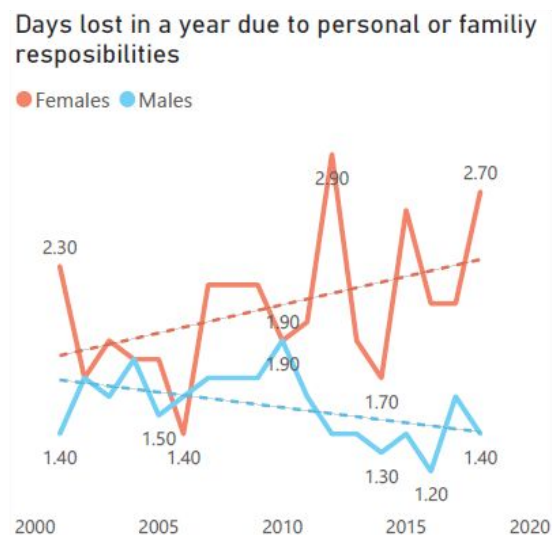


⁵ Statistics Canada. Table 14-10-0096-01 Labour force characteristics by census metropolitan area, annual <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410009601>

Figure 3: Labour Force Absence by Gender and Reason



Figure 4: Trend in Personal Responsibility Time Lost by Gender



While there is no conclusive cause of this identified, it is possible that it could be due to women dedicating substantially more time to family responsibilities in the region. This issue occurs across Canada, with women “retaining a disproportionate share of housework, childcare and eldercare.”⁶

This is evident when we look at the hours of job time lost by reason, and find that women lose almost 300% more hours than males due to “personal and family responsibility”, with other absence reasons remaining closer across gender divides.

TAKE AWAY: The data suggests that women lose more time at work due to family and personal responsibilities, and this may impact their careers as well as ability to apply for full time work.

The trend for females indicates that the number of days is growing, whereas in the males, the number of days is decreasing.

⁵ Statistics Canada. Table 14-10-0122-01 Hours lost by reason of absence, annual (x 1,000)
<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410012201>

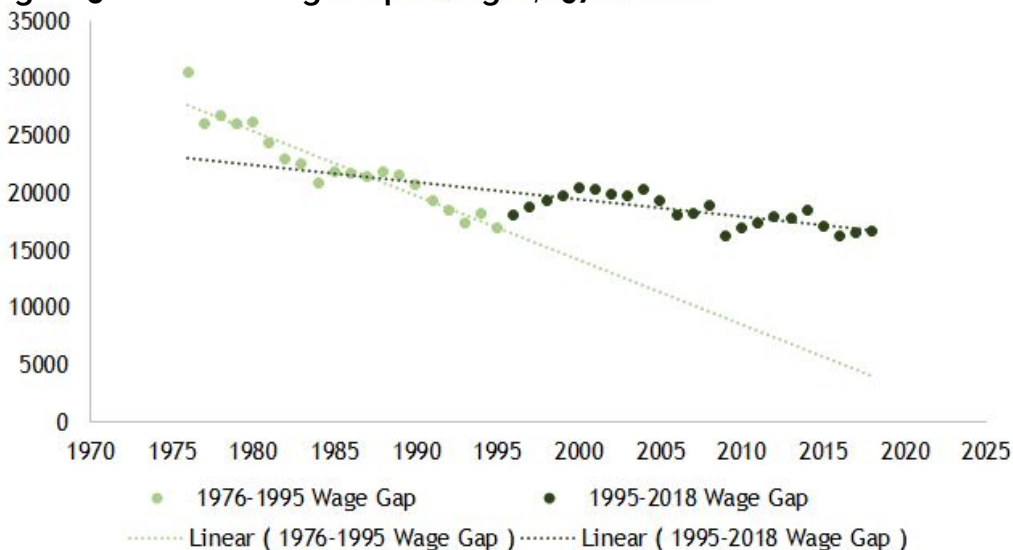
Poverty

Along with the employment gap, income disparities along gender lines for those aged 16 and over have also closed substantially across Canada. From 1976 to 2018, the average income gender gap declined from \$30,500 to \$16,700 (in constant 2018 dollars). However, income disparities remain until the present day; limited changes in the income gender gap have been seen since 1995. The median income gaps have also been relatively unchanged.⁷

The Wage Gap

For women in the KW region, there has been some improvement since 2000 - going against the national trend. The median income gap between men and women in KW was roughly \$15,700 in 2000, but \$13,820 in 2017. The national gap however, remained almost entirely unchanged between these two periods.⁸

Figure 5: Canadian Wage Gap Changes, 1976-2018



TAKE AWAY: While the income gap between men and women across Canada has remained stable for the last two decades, in KW it has continued to close, despite men's income increasing roughly \$10,000 in the region. Median income for both men and women was higher in KW than the national amounts.

⁷ Statistics Canada. Table 11-10-0239-01 Income of individuals by age group, sex and income source, Canada, provinces and selected census metropolitan areas

<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110023901>

⁸ Statistics Canada. Table 11-10-0031-01 Labour income profile of tax filers by sex

<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110003101>

Earnings Potential

What remains of critical interest, however, isn't the absolute gap in income, but the prevalence of limited earnings potential among women across KW. One measure that can be used to examine this prevalence is the number of households earning "an after-tax income which is less than half the median of an after-tax income across all households in Canada." This metric, which Statistics Canada adjusts based on family size, is reported publicly, and is freely available in census information.

Data for Good participants used this data to identify the geographic and demographic drivers of poverty among women, and changes in the rates of employment over time, in the Kitchener-Waterloo-Cambridge (KWC) region. Participants were able to:

- Identify a list of census data points that are correlated with higher or lower rates of low income among women. (A full list is provided in the appendix.)
- Calculate a benchmark "risk score" for low-income prevalence for each census Dissemination Area (DA - commonly thought of as neighbourhoods) based on the low-income measure in other DAs that are demographically similar in terms of census data points. This allowed them to examine the prevalence of a low-income status among women within a census DA compared to a benchmark calculated based on national data, considering the demographic mix of each DA.
- Segment the neighbourhoods of the region into four groups based on the actual low income rate, and examine whether that rate is higher or lower than expected given the demographics of the neighbourhood. Participants have provided a map that can be used to identify these neighbourhoods
- Divide the DAs into four groups, and different strategies may be indicated for each group, as follows on the next page:



- **High prevalence of low-income, and this rate is even higher than expected:** these are neighbourhoods that would benefit most from support. Strategies could be aimed at reducing the underlying drivers of risk (e.g. increasing education rates, or providing targeted support for visible minority women).
- **High prevalence of low-income, but the rate is lower than would otherwise be expected based on the demographics of the neighbourhood:** these are the most challenging neighbourhoods to develop strategies for; despite the high prevalence of low income, they are still doing better than demographically-similar neighbourhoods elsewhere. Given that there may be characteristics unique to the neighbourhood that are not captured in census information, there may be an opportunity to identify these unique characteristics, and determine whether they are transferable to other areas.
- **Low prevalence of low income, but the rate is higher than would otherwise be expected based on the demographics of the neighbourhood:** although these neighbourhoods already have a low prevalence of the low-income metric, there is room for improvement when compared to demographically-similar neighbourhoods elsewhere.
- **Low prevalence of low income, and this rate is even lower than expected:** these are the areas of where current concern is low, and may require monitoring for changes.

This information can be used to identify opportunities to develop programs tailored to specific sub-areas of the KWC region, and to assess how the picture changes over time.

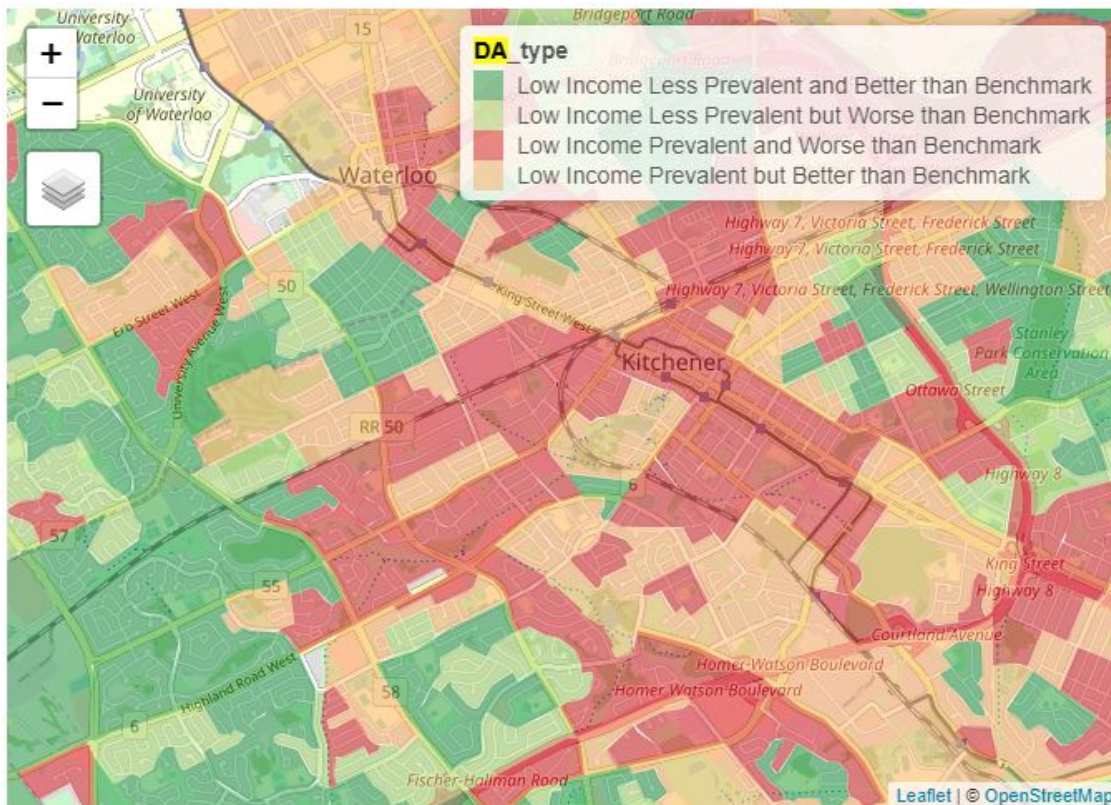
TAKE-AWAY: The initial analysis revealed that while employment-related statistics do impact the low-income rate, their effect is generally less than for other census information, such as housing and education. This suggests that improvements in some of the other factors associated with improvements in the low-income rate would be effective mitigators.

The statistical technique used avoids “double-counting” effects that are correlated with each other. As a result, a data point that does not appear on this list does not necessarily have no effect, but rather, its effect is being captured by another data point on the list.

Examples of areas where the low income measure is higher than the benchmark rate given demographic factors include regions around:

- The eastern segments of Elmira,
- Erb and Ira Needles,
- Erb and Westmount,
- Homer Watson and Huron,
- East Avenue and Frederick.
- The areas around Kitchener (on both sides of King street)

Figure 6: Classification of Kitchener-Waterloo Dissemination Areas by Low Income Groupings



A different statistical technique was also applied to the data, and this segmentation analysis revealed 2 key zones in KW affected by poverty:

- N2C postal code zone (proximity to Fairview mall)
- N2G postal code zone (between Highway 8 and the Grand River Hospital)

These zones were highlighted in the previous analysis; the N2C area was identified as having a higher than benchmark low income rate, but slightly less low income prevalence. The N2G area was highlighted as having much higher amounts of low income prevalence, much worse than the expected benchmark. These findings, across two different approaches, are complementary and add evidence to the theory that the regions identified are struggling.

The demographic profiles within these regions are:

- 91% Canadian citizens, 19% belong to a visible minority
- Lowest median household income across the Waterloo region
- Highest average low-income prevalence within this region
- 10% fewer females participating in the labour force
- Females earn ~\$10K less income than males
- Almost 50% have postsecondary certificate or diploma

Sexual Assault

In addition to the economic wellbeing of women in the region, Data for Good participants also examined issues of gender based violence, with a particular focus on sexual assault. One key question **The Feminist Shift** has been investigating is how law enforcement and the justice system handle such cases.

For data on cases handled by Waterloo regional police - including allegations, unfounded rates, and police practices - we used Criminal Offence Summary data released by WRPS⁹ annually, with the most recent release containing data for 2018. This information was supplemented with data from the Globe and Mail publication when looking at historical unfounded rates, and the Statistics Canada uniform crime reporting survey when comparing other jurisdictions or provincial averages. Although these data sources look to tell a similar story, a significant limitation lies in the differences in their methodologies, and assumptions for each of the data sources. For a detailed discussion, please see Assumptions & Limitations.

Waterloo Regional Police Services Response to Sexual Assault

Sexual violations and sexual assault in particular are of interest to **The Feminist Shift** in their mission of supporting girls and women since data show that they are a gendered crime. Women are significantly overrepresented as victims of sexual assault compared to other crimes. Ontario violent crimes data shows that, whereas males are 13% percent more likely to be victims of assault, females are 670% more likely to be victims of a sexual assault. Unfortunately, data at the local level was not available in this case.

Figure 7: Ontario Violent Crimes (per 100K) by Category and Victim Gender¹⁰

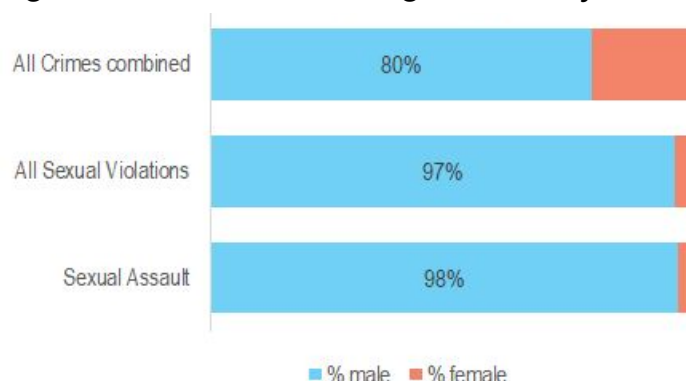
Crime Description	Male Victim	Female Victim	
Assaults	487.8	432.4	11% lower
Other Violent Crimes	217.4	211.5	3% lower
Sexual Assault (levels 1, 2, 3)	14	107.8	670% higher
Sexual Violations against children	5.3	21.5	306% higher

⁹ Waterloo Regional Police. Annual Reports. 2018 Appendix A: Criminal Offence Summary. Accessed November 2019. <https://www.wrps.on.ca/en/about-us/annual-reports.aspx>

¹⁰ SStatistics Canada Table: 35-10-0051-01, data for 2018
<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3510005101>

Furthermore, when cases result in a charge against an adult suspect, the suspect's gender is identified in the reporting as follows:

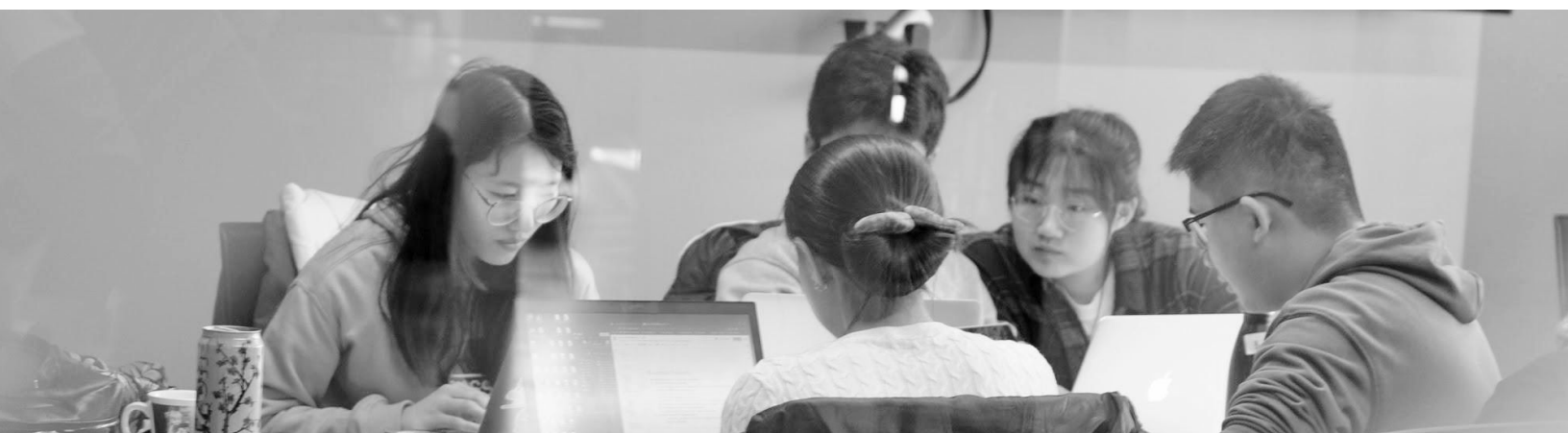
Figure 8: Distribution of Charged Adults by Gender (2018)



In fact, in the five years between 2014 and 2018, there were only cases of 13 female adults charged with sexual assault in Waterloo Region. Note that we exclude all charges against youth in this investigation.

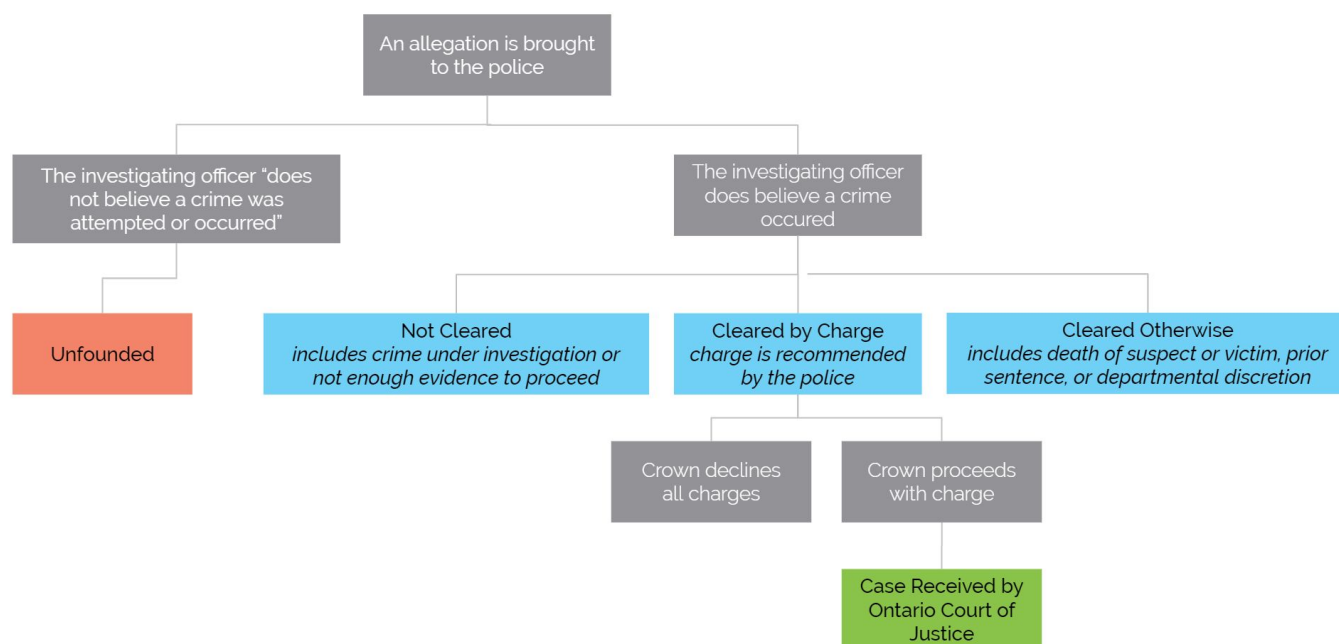
TAKE AWAY: Women are significantly more likely to be victims of sexual assault, while males are significantly more likely to be charged with a sexual assault crime. In Ontario in 2018, females were 670% more likely to be victims of a sexual assault. In Waterloo Region in 2018, males represented 98% of all adult charges for sexual assault.

For that reason, it is important to understand what happens when a victim brings an allegation to the police: is it believed? Is it investigated? Does it result in a charge? We look to understand the fundamental question of, if an allegation is brought to the police, is the suspect brought in front of the law? We will look into the outcomes of the charge as it moves through the justice system in the following section, *Justice System Outcomes*.



When an allegation is brought to the police, it flows through the system as per the following:

Figure 10: Simplified Flow Chart of Allegations



The investigating officer will code the allegation in police reporting in one of four ways, depending on how it is handled: Unfounded, Not Cleared, Cleared by Charge, or Cleared Otherwise. A crime that is Cleared by Charge will move to the court of justice if the Crown proceeds with a charge or the victim presses charges.

In 2017, a Globe and Mail investigation brought to light the issue of how sexual violations were being treated by police forces across Canada. The investigation reviewed national, provincial, and local police forces by looking at the allegations brought to the police that were never investigated:

When Canadian police officers complete an investigation, they give it a closure code to show the outcome. One of those codes is "unfounded." "Unfounded" indicates the investigating officer does not believe a crime was attempted or occurred.¹¹

Sexual violations, in particular sexual assault, saw significantly higher unfounded rates than crimes overall. We aim to understand the current picture of how sexual violations are handled by police in Waterloo Region.

¹¹ Doolittle, Robyn, Michael Pereira, Laura Blenkinsop, and Jeremy Agius. "Unfounded: Will the Police Believe You?" The Globe and Mail. February 3, 2017. Accessed November 2019. <https://www.theglobeandmail.com/news/investigations/compare-unfounded-sex-assault-rates-across-canada/article33855643/>

Comparing different Sexual Violations

The sexual violation classification contains over a dozen different categories. Although often there is a focus on sexual assault specifically, here we look at all of the different sexual violations categories in the Waterloo Region data to show a detailed breakdown of unfounded rate for each specific violation code:

Figure 11: Total unfounded rate for allegations between 2014 and 2018, inclusive

Code	Description	% Unfounded	
1310	Aggravated Sexual Assault (Level 3)	14%	1 out of 7 allegations
1320	Sexual Assault With Weapon (Level 2)	6%	1 out of 16 allegations
1330	Sexual Assault (Level 1)	17%	434 out of 2491 allegations
1345	Sexual Interference	5%	27 out of 524 allegations
1350	Invitation to Sexual Touching	0%	0 out of 116 allegations
1355	Sexual Exploitation	7%	2 out of 27 allegations
1370	Luring a Child via a Computer	8%	10 out of 124 allegations
1371	Agreement or Arrangement - Sexual Offence Against Child	4%	3 out of 82 allegations
1390	Nonconsensual Distribution of Intimate Images	1%	1 out of 73 allegations

Although Sexual Assault (level 1) has the highest volume, as well as unfounded rate of allegations, other classifications with high unfounded rates may be worth consideration as they can point in very different directions.

Sexual Interference - (criminal code section 151) "[a person] for a sexual purpose, touches, directly or indirectly, with a part of the body or with an object, any part of the body of a person under the age of 16 years";

Sexual Exploitation - (criminal code section 153) "[a person in] a position of trust or authority towards a young person... (a) for a sexual purpose, touches... any part of the body of the young person; or (b) for a sexual purpose, invites, counsels or incites a young person to touch... the body of any person...";

Luring a Child via a Computer - (criminal code section 172.1) "[a person] who, by a means of telecommunication, communicates with a person who is... under the age of 18 years, for the purpose of facilitating the commission of an offence with respect to that person";

Agreement or Arrangement - Sexual Offence Against a Child (criminal code section 172.2) "[a person] who, by a means of telecommunication, agrees... or makes an arrangement with a person, to commit [a sexual] offence [against a child]".

Worryingly, these classifications are violations of a sexual nature towards children. Although the volume of these cases in Waterloo Region is low, it is concerning that any allegations of this nature may be considered unfounded.

Comparing to Other Jurisdictions

How does the Waterloo Region compare nationally, to the provincial average, and to other comparable local jurisdictions? Here we look at the sexual assault incident rate per population over the last decade, as well as the most recent on founded rates for sexual assault allegations.

Figure 12: Sexual Assault Incident Rate (per 100K population), key comparison jurisdictions¹²

Jurisdiction	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Unfounded Rate in 2018
Canada	75	74	79	78	77	75	74	77	85	98	108	11.4%
Ontario	63	61	67	68	69	65	65	67	74	87	97	9.4%
Kitchener-Cambridge-Waterloo	69	77	74	84	75	68	80	72	79	106	123	6.4%
Guelph	57	53	53	88	98	91	70	66	105	123	136	4.5%
London	60	63	72	80	71	79	56	60	61	94	101	2.7%
Toronto	49	47	53	53	54	50	52	53	57	63	72	9.3%

Over the three most recent years available in our data, we see that the Waterloo region sexual assault incidence rate per population is higher than the national average, the provincial average, and comparable local jurisdictions, lower only than that in Guelph. We also see the Waterloo region having unfounded rates that are lower than both the national and the provincial average.

Figure 13: Outcomes to all Sexual Violation Allegations in 2018, key comparison jurisdictions¹²

Jurisdiction	% cleared by charge	% cleared otherwise	% unfounded	% not cleared
Canada	36%	14%	11.4%	39%
Ontario	38%	14%	9.4%	39%
Kitchener-Cambridge-Waterloo	28%	11%	6.4%	55%
Guelph	33%	24%	4.5%	39%
London	41%	17%	2.7%	39%
Toronto	39%	9%	9.3%	43%

Here we see that Waterloo region's Not Cleared rate of 55% in 2018 is higher than the national, provincial, as well as similar local jurisdiction numbers, all of which show a fairly consistent rate of allegations in the Not Cleared category of just over ⅓. Does WRPS have a methodology for sexual violation investigation that requires cases to stay Not Cleared for longer than the comparison jurisdictions, or is there a concern with cases not moving to being cleared? A detailed look is presented in the following section.

¹² Statistics Canada. Table 35-10-0177-01 Incident-based crime statistics, by detailed violations, Canada, provinces, territories and Census Metropolitan Areas

Note that data reported by Statistics Canada does not correspond 1:1 to data reported directly by WRPS. This is addressed further in the Assumptions & Limitations section.

Changes in the Unfounded Rates

This was cause for concern in the Waterloo region, since the Waterloo Regional Police Service (WRPS) was found to have an unfounded rate for sexual violation allegations - including sexual assault - that was significantly higher than the national average. The article discovered that almost a third of all sexual violation allegations brought to the WRPS were being dismissed as unfounded, and no investigation resulted.

*Waterloo Regional Police recorded 27 per cent of sexual assault complaints as unfounded, eight per cent higher than the national average*¹³

Since this was brought to light, we have seen the Waterloo Regional Police accept accountability, take a number of steps to reduce the unfounded rates, and focus on bringing a victim-centered approach.



In 2017, a Sexual Assault Task Force was formed to undertake a detailed investigation of how sexual violation allegations were treated, in full participation with WRPS. The review committee made a number of recommendations around training and procedural changes that were fully accepted by WRPS¹⁴. In 2018, WRPS was implementing the recommendations, with their annual report quoting that they had "implemented a victim-focused and community based case review model for sexual assault investigations to further enhance our ability to investigate crime."¹⁵

¹³ Ponciano, C.. "Waterloo Regional Police to review unfounded sexual assault cases." CBC News. March 02, 2017. Accessed March 2020. <https://www.cbc.ca/news/canada/kitchener-waterloo/waterloo-police-review-unfounded-sexual-assault-cases-1.4006499>

¹⁴ "Task force releases final report on 'unfounded' sexual assault cases." CBC News. July 11, 2018. Accessed March 2020. <https://www.cbc.ca/news/canada/kitchener-waterloo/task-force-releases-final-report-on-unfounded-sexual-assault-cases-1.4741066>

¹⁵ "Waterloo Regional Police Service: 2018 Annual Report." Accessed March 2020. <https://www.wrps.on.ca/en/about-us/resources/Annual-Reports/2018/2018-Annual-Report-v11.pdf>

Did all of these measures make a difference to victim experience? Let's take a data centred view:

Figure 14: Rate of Sexual Violation Allegations Dismissed as Unfounded by WRPS

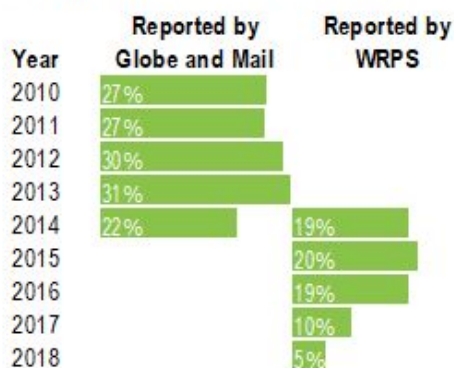
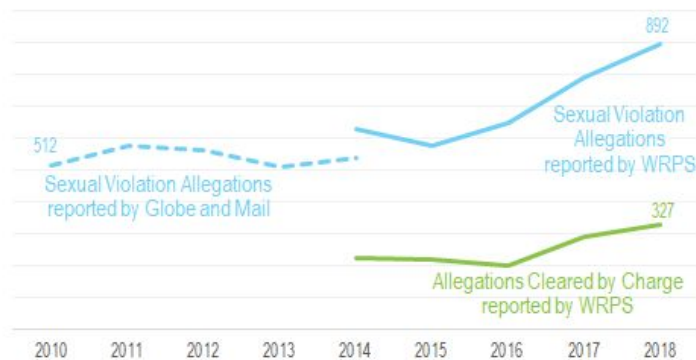


Figure 15: Outcomes to Sexual Violation Allegations



On first glance, we see a good news story: the unfounded rates for sexual violation allegations have dropped over the last five years, while the total number of allegations brought to the police have increased. The number of allegations being cleared by charge are also rising. These findings have been reflected by the media as well as in police reporting. Note that some discrepancies in the data sources did appear; we discuss these further in the Assumptions and Limitations section.

The increase in allegations being brought to police may be attributed to a number of possible factors: the decrease in victim stigmatization brought by the #MeToo movement, increase in visibility of local or national support organizations or campaigns, increased awareness and media coverage of high-profile sexual assault allegations, or the increasing population of the Waterloo region. Looking at the data alone, we cannot determine the contribution of any of these factors, but it is reasonable to say that they all played a part.

Note that a similar increase in police-reported sexual assault cases has been seen on a national level. As has been reported by Statistics Canada "Rate of police-reported sexual assault notably higher for second year in a row, and fourth consecutive annual increase overall" and some widespread research goes suggest this increase may be "coinciding with the widespread #MeToo social media movement."¹⁶

¹⁶ Moreau, Greg. "Police-reported crime statistics in Canada, 2018" Canadian Centre for Justice Statistics. July 22, 2019. Accessed April 2020. <https://www150.statcan.gc.ca/n1/pub/85-002-x/2019001/article/00013-eng.htm>

The CBC reports that “the number of sexual assault cases deemed “unfounded” by the Waterloo Regional Police Service was reduced by nearly half [in 2018]... The percentage of unfounded cases declined from 15 per cent in 2017 to 8 per cent in 2018.”¹⁷

Nevertheless, what looks like a significant drop in unfounded rates requires a deeper investigation. In 2017, a significant change in definitions and reporting methodology was recommended by Statistics Canada that was phased in during the 2017 and 2018 reporting years, precisely when we see the improved sexual assault unfounded rates for WRPS.

How much of the improvement can be attributed to real organizational changes and how much is due to a change in definitions? For a detailed discussion of definition changes, see *Appendix A: Detailed Discussion of Changes in Unfounded Definitions*.

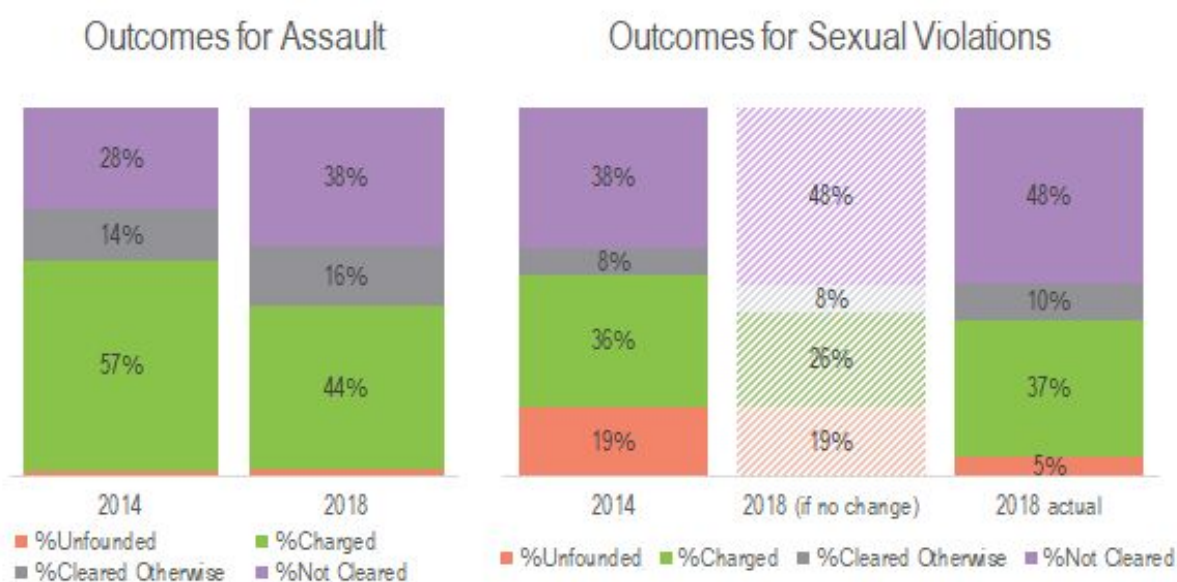
Overall, the drop in WR's unfounded rates does not immediately come with an increased rate of charges. There may be several explanations for this, and time will tell whether the changes are successful in bringing about concrete positive outcomes. For now, one way to estimate whether change is moving in the right direction is to compare the outcomes of sexual violations to assaults: let's take a look at the 5-year difference between 2014 vs 2018 outcome rates for each category. Since the data is reported in 2019, we can consider that outcomes of crimes for 2014 are “final outcomes” and outcomes for crimes in 2018 are “outcomes one year after reporting.”



¹⁷ Duhatschek, Paula. “Unfounded” sexual assault rate nearly halved by Waterloo region police.” CBC News. September 12, 2019. Accessed March 2020.
<https://www.cbc.ca/news/canada/kitchener-waterloo/rate-of-sexual-assault-cases-deemed-unfounded-nearly-halved-in-2018-1.5279901>

We see that for assaults, the difference between the 1-year and the eventual outcomes is as follows: we see that 10% of crimes move from the not cleared category to the cleared by charge category within those five years, while the rates of unfounded and cleared otherwise remain similar. We can use this simplistic model to consider whether the changes in how sexual violation allegations are handled have had an impact.

Figure 16: Outcomes for Assault and Sexual Violations, compared



Looking at the distribution of outcomes for sexual violation allegations in 2014 and the above logic, we can create a picture of what we'd have expected to see in 2018 had no changes occurred: same rate of unfounded and same rate of cleared by charge allegations, and a 10% movement from rate of not cleared to cleared by charge. What we see instead is that the decrease in unfounded rates comes with a (hypothetical) increase in rates of clearances by charge. This leads us to believe that the proportion of allegations that may have been dismissed as unfounded in the past is leading to outcomes of closure, but the truly convincing evidence will appear when as can revisit these numbers and find out whether the expected rate of clearances by charge do in fact occur.

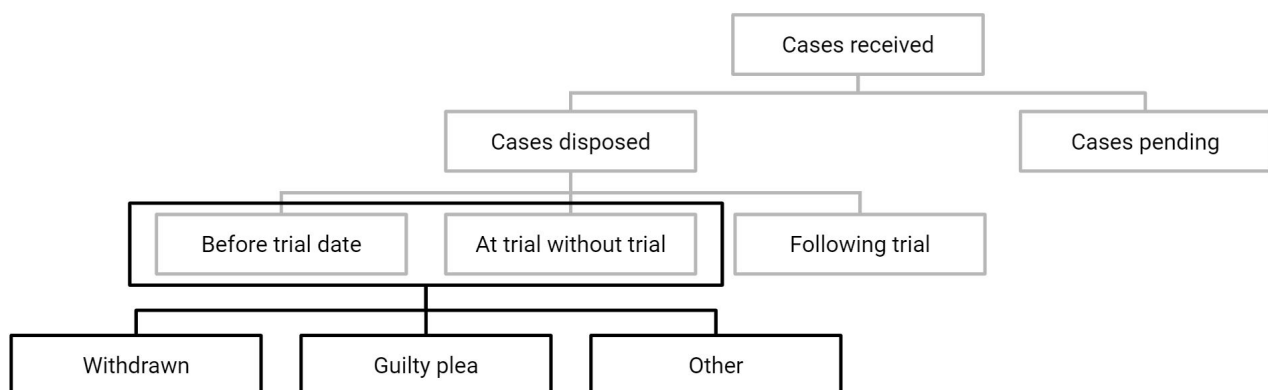
TAKE AWAY: Although we are moving in the right direction, sexual allegations and especially sexual assault continue to see higher unfounded rates and lower rates of charge than overall crimes. Additionally, it remains to be seen whether the additional rate of investigated allegations will translate into a higher rate of charges laid. There may be value in revisiting this analysis after a sufficient amount of data is available.

Justice System Outcomes

In this section we consider what happens when a case goes to court: does it lead to a conviction? This analysis was performed using public criminal court statistics from the Ontario Court of Justice. These statistics are reported at different geographical levels such as Ontario, Southwest Ontario and Kitchener for each calendar year. Currently, these statistics are available from 2012 to 2019. Also, these statistics are grouped on offence type and for the purpose of this report we only considered sexual assault as the offence type. The statistics include the number of cases received, disposed and pending (see Figure 17). Disposed cases have received a judicial officer's decision, whereas pending cases have a future court date or have had activity in the last 18 months and thus awaiting decision. Cases received do not necessarily get disposed within the same calendar year and will be registered under pending. Therefore, these cases will be carried forward in the next year(s) which results in a delay in these numbers. The delay in the case disposition is a major limitation in understanding the case statistics. The statistics of cases disposed are registered to become disposed at three different moments in time (see Figure 17):

- Disposed before a trial - the case never comes to a trial; includes cases withdrawn before trial (i.e. dismissed), guilty plea before trial (i.e. conviction), and other disposition (i.e. not specified).
- Disposed at trial without trial - trial starts but is not completed; includes withdrawn at trial (i.e. dismissed), guilty plea at trial (i.e. conviction), and other disposition (i.e. not specified).
- Disposed following a trial - trial completes with a decision. Disposed cases following a trial represent how many cases actually go to trial which is also described as the trial rate.

Figure 17: Overview of statistics analyzed from the Ontario Court of Justice



Total sexual assault cases received

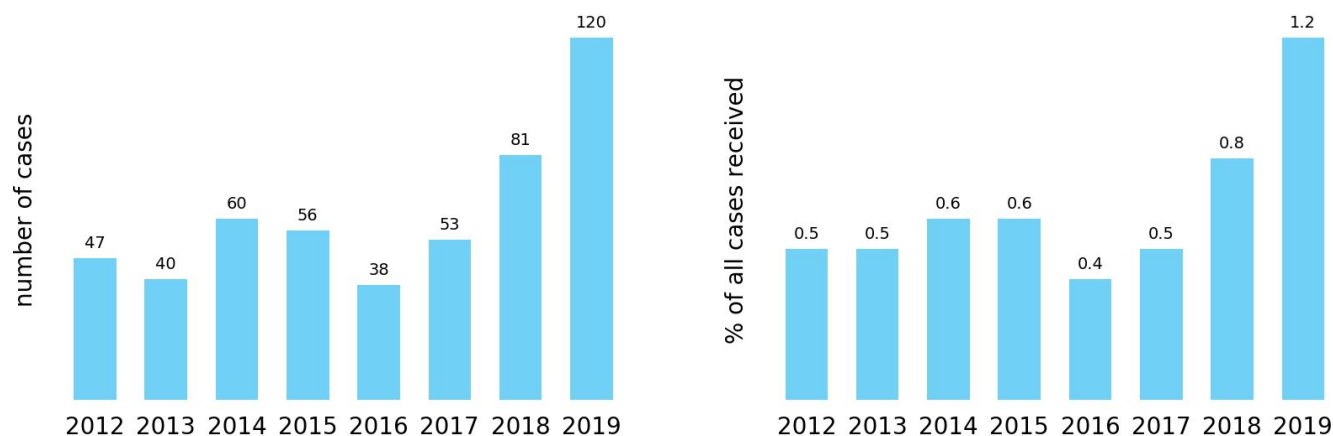
The number of sexual assault cases received by the Kitchener Court of Justice show a considerable increase since 2016/2017 (see Figure 18 - left). Most alarming was the approximately doubling of growth in cases in 2017-2018 (increase of 28 cases) in comparison to 2016-2017 (increase of 15 cases). The trend of a notable increase in cases since 2016/2017 is also supported in both Ontario and Southwest Ontario (see Appendix D). In Kitchener¹⁸, the largest increase per year was reported from 2018 (81 cases) to 2019 (120 cases, increase of 39 cases), while across 2012-2019 the average change in number of cases was an increase of 11 cases per year.

TAKE AWAY: Since 2016/2017 sexual assault cases have been notably increasing at all three regional levels of Kitchener, Southwestern Ontario and Ontario.

The number of received cases can also be analyzed as a percentage of all cases received (see Figure 18 - right). Sexual assault cases only make up 0.5 to 1.5 percent of all cases received by the Ontario Court of Justice across all three regional levels (see Appendix D). Since 2018 sexual assault cases increased as a percentage of all cases received, which reflect relative growth with respect to all other case types. Possibly, this increase reflects that compared to all cases more sexual assault cases were taken to court.

TAKE AWAY: Since 2018 sexual assault cases relative to all cases received by the Ontario Court of Justice showed a considerable increase.

Figure 18: Kitchener court sexual assault cases from 2012 to 2019



¹⁸ Municipal Provincial Offences Court Contacts. Accessed March 2020.
https://www.attorneygeneral.jus.gov.on.ca/english/courts/Court_Addresses/poa/#K

Disposed and pending sexual assault cases

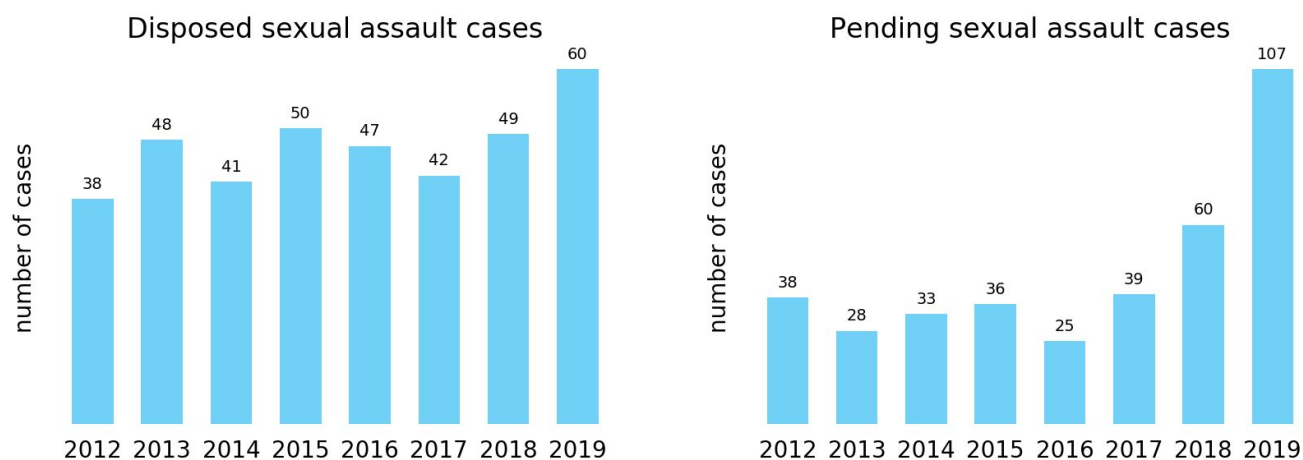
Kitchener shows a variable number of disposed cases, although a consistent increase in cases was observed since 2017 (see Figure 19 - left). In contrast, Ontario and Southwestern Ontario shows a reduction in the number of sexual assault cases disposed from 2012 to 2015 (see Appendix D). However, more in line with Kitchener an increase was observed since 2016.

TAKE AWAY: Since 2016/2017, more sexual assault cases have been disposed which is in line with the increase in the cases received by the court.

Similar to the disposed cases, Kitchener shows variable numbers of pending cases from 2012 to 2015 and since 2016 a consistent increase was observed (see Figure 19 -right). In contrast, Ontario and Southwestern Ontario show an increase in number of pending cases of sexual assault since 2013, after a reduction from 2012 to 2013 (see Appendix D). Most remarkable is that at all regional levels the number of pending cases showed the largest increase from 2018 (Ontario: 2905 ; Southwest:473 ;Kitchener: 60) to 2019 (Ontario:3630 ;Southwest:612 ;Kitchener: 107).

TAKE AWAY: Since 2016 the number of pending sexual assault cases have been rising, with the largest increase in the last year.

Figure 19: Disposed and pending sexual assault cases at Kitchener court from 2012 to 2019

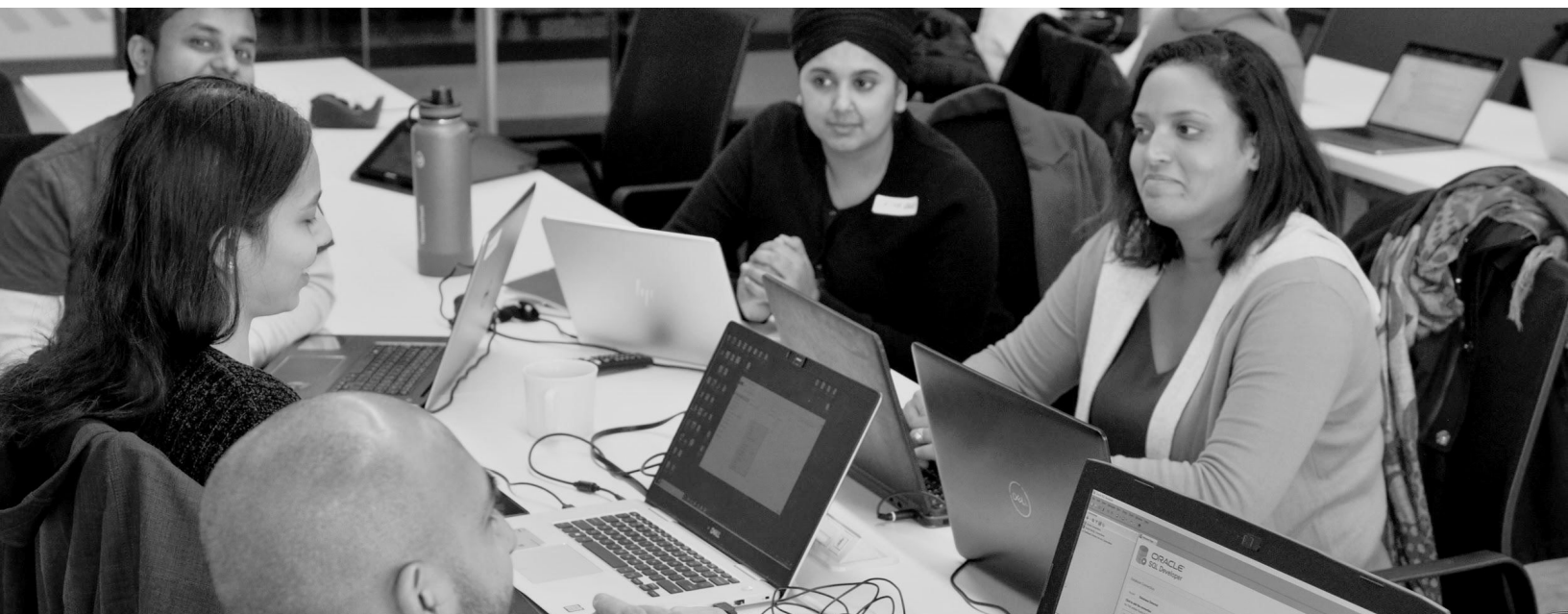


Disposed sexual assault cases at different stages and with different outcomes

From 2012 to 2019 the Kitchener court showed variations in percentage of disposed cases at three moments with respect to trial date (see Figure 20 - left). In 2019 less cases were disposed before trial, whereas a shift to more disposed cases either at or after trial was not observed. These trends are in line with the other regional levels (see Appendix D). The percentage of disposed cases at trial seemed relatively small in Kitchener from 2015 to 2018 (range of 6 to 12 %), in comparison to other years and regions. However, the small percentage could be a misrepresentation caused by a smaller scale in Kitchener relative to Southwest and Ontario..

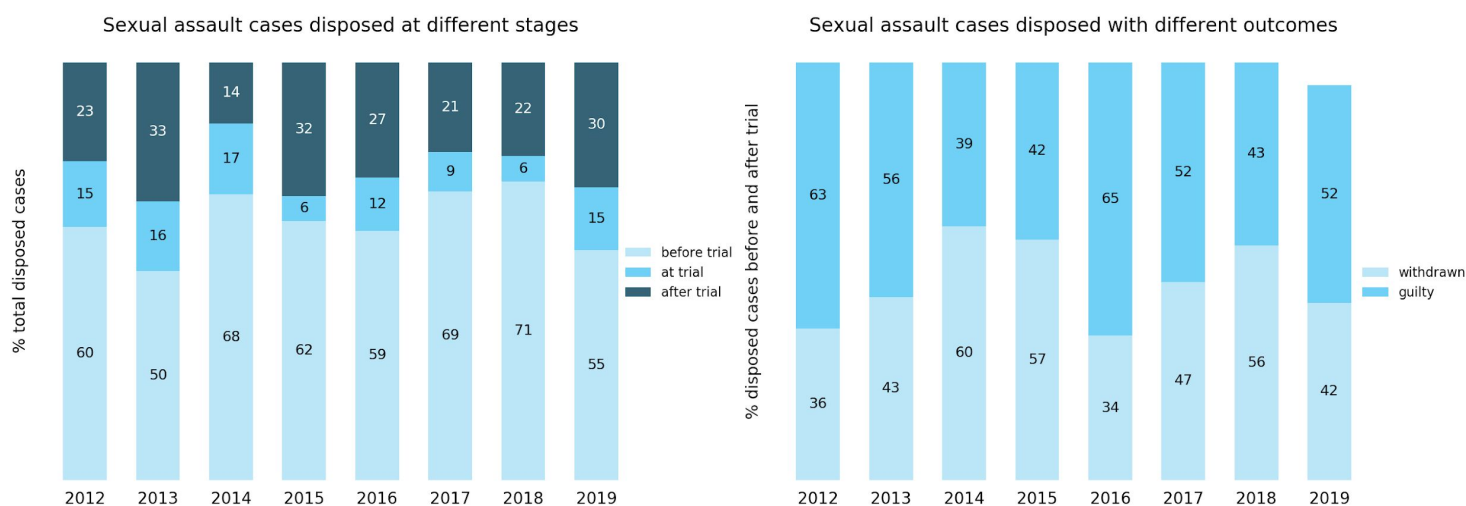
TAKE AWAY: Overall there seems to be a year-to-year variation in the percentage of cases disposed at different moments with respect to trial date. It may be promising that in 2019 less cases were disposed before the trial date. However, this finding can not be explained as to why cases were disposed and therefore should be taken with caution.

Withdrawn and guilty disposed cases show considerable year-to-year variation in Kitchener from 2012 to 2019 (see Figure 20 - right). This considerable variation can be explained by the lower scale. However, Kitchener consistently shows a higher proportion of guilty cases in conjunction with a lower proportion of withdrawn cases when compared to the two other regions (see Appendix D). In Ontario and Southwest the withdrawn and guilty disposed cases remained stable from 2012 to 2019. Note that the third outcome of "other" besides "withdrawn" or "guilty" was excluded from this analysis because it was negligible (only a few cases).



TAKE AWAY: Ontario and Southwestern Ontario show a stable percentage of withdrawn and guilty cases. Although Kitchener shows more variation of withdrawn and guilty cases, there consistently seems to be more guilty cases in comparison to the other two regions.

Figure 20: Percentage of sexual assault cases disposed at three different moments with respect to trial date (left) and percentage of sexual assault cases disposed with different outcomes from 2012 to 2019 (right)



For a detailed glossary of terms, please see:

<https://www.attorneygeneral.jus.gov.on.ca/english/glossary/>

Conclusion

Our overall findings conclude that issues of employment, poverty, and gendered violence continue to be areas of concern in Waterloo Region. While there are many positive statistics and significant change for the better, there are also many opportunities for improvement and cases where the Waterloo Region falls short of provincial averages.

The work to support women in their journey towards improving employment outcomes as well as bringing justice to sexual assault perpetrators is far from done. We hope that the findings coming out of this engagement and laid out in this report help affirm the difficult and important work the YW is executing every day.

Data for Good's mandate is to partner with local not-for-profit and non-governmental organizations to harness the power of their data to enable more informed decision-making.



Assumptions & Limitations

The analysis underlying this report was completed by a team of Data for Good Waterloo Region volunteers, building off the insights unearthed during our November 2019 Datathon with YW of Kitchener-Waterloo (**The Feminist Shift**).

To find relevant insights, the analysis included publicly-available datasets from a variety of sources, as well as supplemented with research into relevant publications and news sources. Our analysis represents our findings only, our opinions and positions are our own and do not reflect on sources of data collected. Interpretation of codes and coding instructions are our opinion, and may not correspond to actual practices. Data collection and reporting methodologies may vary across sources, and in those cases no attempt has been made to validate the difference, they are simply reported as-is.

Data limitations specific to each report section are as follows.

Socioeconomic Demographics Data & Analysis

The analysis was done based on census averages, rather than based on data from individual respondents. This explains why, for example, an improvement in the male employment rate can reduce low-income prevalence among women. However, in situations like this it is likely only women who are part of two-person households who are benefitting from an improvement in the male employment rate. This points toward the need to perform more granular analysis using individual data, if it can be obtained.

Industries in North America are classified into segments using the North American Industry Classification (NAICS) codes. However, one company can operate in multiple industries, but is only classified in one NAICS code (the one which comprises the largest segment of their business). Jobs within industries are classified using the National Occupation Classification codes. In order to identify detailed trends about women and their work across industries, including what jobs they are doing in different sectors and how this impacts work inequalities, data about the jobs classified by NOCS is required, for each NAICS industry. This would require additional customized requests from Statistics Canada, and so for this purpose data is presented as-is for both classifications.

Although research suggests there can be relationships, our data does not allow us to correlate sexual assault victims with employment.

Sexual Assault Data & Analysis

Three data sources were needed to tell the full story around how sexual violation allegations are handled in Waterloo Region and how this compares to provincial averages: Globe and Mail Unfounded article, Waterloo Regional Police crime offence statistics, and Statistics Canada's Uniform Crime Reporting Survey. Although they told similar stories, the three data sources often did agree on specific point-in-time statistical values. For example: in 2014, the Globe and Mail reports 537 sexual violation allegations (119 unfounded and 418 actual), WRPS reports 629 sexual assault allegations (118 unfounded and 511 actual), and Statistics Canada reports 428 actual sexual assault allegations (unfounded allegations not reported).

Because the differences in methodologies were not transparent, we do not attempt to reconcile the differences and are simply reporting the numbers as they appear in each original sources. Additionally, when comparing crime reporting, Statistics Canada notes that coding practices may vary across different jurisdictions or across different individuals within a jurisdiction, and coding practices may change across years or within a year with no clear reflection in the data.

Justice Court Data & Analysis

The Kitchener Court of Justice reports data on cases accumulated during each calendar year. However, cases received in a year do not necessarily get disposed within that same year and are registered as pending. Pending cases are carried forward in the following year(s) and therefore the outcome of pending cases is registered with a delay. In addition, the method of reporting cases does not allow to follow pending cases of previous year(s) nor single cases. Thus, the number of cases analysed each calendar do not necessarily represent that specific year but rather multiple years depending on how long it takes to complete a case since it was received.

The Kitchener Court of Justice is a small region compared to Southwest Ontario and the entire province Ontario. All court statistics that were converted to a percentage are prone to possible misrepresentation because of the small scale (e.g. % of all cases received). Any year-to-year variation in percentage court statistics of Kitchener could simply be explained by the small scale rather than true variation in the data.

Finally, it is important to note that methodologies used in this report may be different from other sources, reports, and publications.

Contributions

We thank everyone who has contributed to making this collaboration and report possible.

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Michelle Ko

Mike Fellowes

Milan Patel

Mingang Zhu

Nathalie Oomen

Neda Paryab

Negin Safdari

Prem Eapen

Rohan Surve

Ryan Deschamps

Sasha Ali-Hosein

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Appendix A:

Detailed Discussion of Changes in Unfounded Definitions

How much of the improvement can be attributed to real organizational changes and how much is due to a change in definitions?

Statistics	2014	2015	2016	2017	2018
Number					
Actual incidents	547,570	551,243	567,627	599,314	642,654
Rate					
Rate per 100,000 population				4,259.08	4,486.94
Percentage change in rate ⁹				4.11	5.35
Unfounded incidents ⁹				36,334	31,030
Percent unfounded ⁹				5.72	4.61
Total cleared				276,846	280,936
Cleared by charge				200,876	211,160
Cleared otherwise	75,009	75,400	73,448	75,970	69,776
Total, persons charged ¹⁰	185,272	185,420	187,621	192,375	200,483
Rate					
Rate, total persons charged per 100,000 population aged 12	1,562.39	1,552.90	1,551.29	1,566.04	1,601.09

Footnote 9

Data for unfounded incidents are available for 2017 and subsequent years in order to resume collection that had been halted in 2006 due to inconsistent reporting. To improve comparability, the definition of founded and unfounded criminal incidents was revised in 2017 and any prescribed changes relating to the classification of incidents will be phased in over time starting with the reporting of 2019 data. As such, it is understood that inconsistencies in reporting may still exist in 2017 and 2018. Data may therefore be incomparable across police services.

Close

The Canadian Centre for Justice Statistics published the following overview of the definition changes:

Until recently, an incident was deemed founded according to the UCR Survey if, "after police investigation it has been determined that a Criminal Code or other federal statute violation has occurred even if the charged/suspect chargeable (CSC) is unknown" (Statistics Canada 2016). For the UCR Survey, the concept of a CSC refers to a person against whom there is enough evidence for police to either lay a charge or recommend to the Crown that a charge be laid.

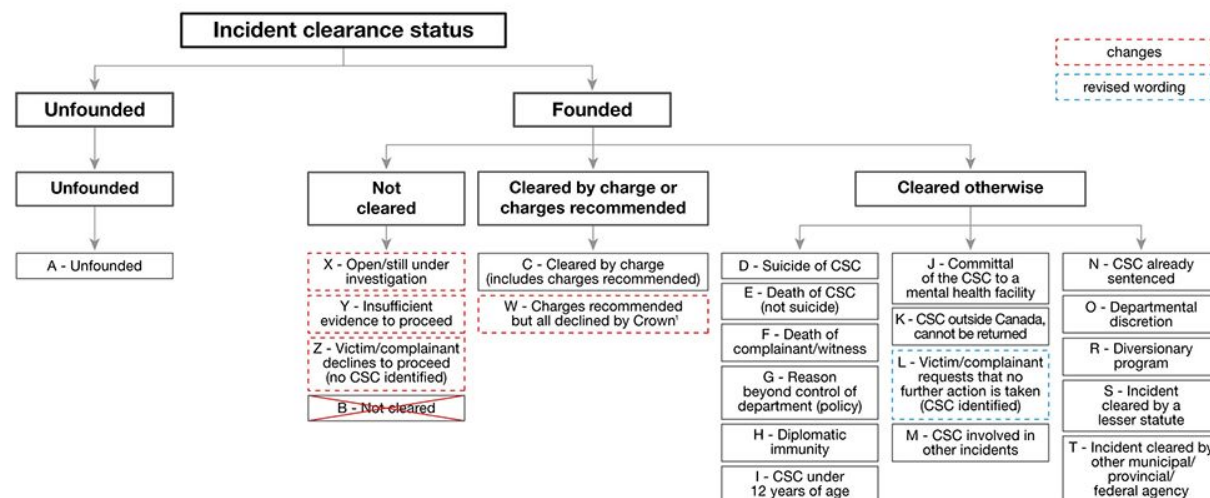
More recently, however, definitions of founded incidents have evolved to account for the complexities of certain offences such as sexual assault, family violence and intimate partner violence. A victim-centred approach to recording crimes is emerging and puts forth that, unless there is concrete evidence to prove the crime did not happen, it is to be believed that the crime occurred (Her Majesty's Inspectorate of Constabulary 2014; Government of United Kingdom 2016; Human Rights Watch 2013). For instance, the International Association of Chiefs of Police recommends the following standard:

The determination that a report of sexual assault is false can be made only if the evidence establishes that no crime was committed or attempted. This determination can be made only after a thorough investigation. This should not be confused with an investigation that fails to prove a sexual assault occurred. In that case the investigation would be labeled unsubstantiated. The determination that a report is false must be supported by evidence that the assault did not happen (International Association of Chiefs of Police 2005).

To put simply, the definition of “unfounded” has been transitioning from cases when a police officer does not believe a crime has occurred, to assuming a crime has occurred unless there is evidence otherwise.

Additional changes to definitions made in 2017 also included changes to the “Not Cleared” category, which now contains several sub-categories. Cases are considered not cleared if they are (X) still under investigation, (Y) [there is] insufficient evidence to proceed, or (Z) victim declines to proceed and no suspect identified. This level of detail was not available in the data released by WRPS with its annual reports.¹⁹

Figure 1
Modifications to the Uniform Crime Reporting Survey Incident clearance status options



A to Z—Police service clearance status code

1. To be used in circumstances when all charges are declined by the Crown:
- In provinces which require Crown charge approval, or
 - For violations which require Crown charge approval, or
 - For any other violations recommended to the Crown

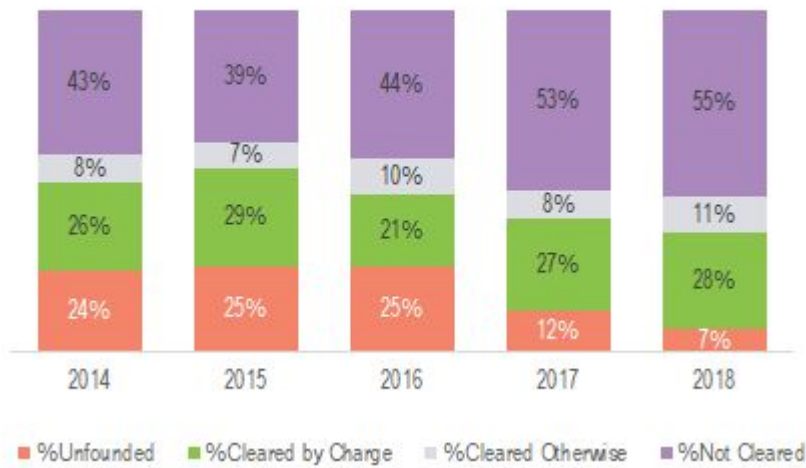
Note: CSC—charged/suspect chargeable. For the Uniform Crime Reporting Survey, the concept of a CSC refers to a person against whom there is enough evidence for police to either lay a charge or recommend to the Crown that a charge be laid.

Does this create a possibility of alleged crimes - in particular sexual assault - that were previously *unfounded* falling into the *not cleared* category because the police officers consider that there is no evidence to proceed? More detailed data is needed to understand this. If possible, WRPS should be encouraged to release data with the police service clearance status code.

So how did the definition changes impact the Waterloo Regional Police's reported allegations? As cases that may have been dismissed as unfounded in the past are investigated, we would expect to see a proportional distribution of cases moving through categories of Not Cleared, and then moving to Cleared by Charge or Cleared Otherwise. In the two years of data that we have available where we see a significant drop in the rates of unfounded cases, we do not see any rise in the rate of cases cleared by charge. Instead, we are seeing the rate of cases *not cleared* continue to rise as the unfounded rate continues to drop. This may be reasonable since investigations may take time, as well as since the Not Cleared category leaves room for cases which the victim does not wish to pursue. Until additional data is released (over the next few years) and we see a corresponding increase in the rate of cases Cleared by Charge, we will not know whether the changes implemented by WRPS are having concrete outcomes of bringing sexual assault suspects to the justice system.

¹⁹ "Revising the classification of founded and unfounded criminal incidents in the Uniform Crime Reporting Survey." The Canadian Centre for Justice Statistics. July 12, 2018. Accessed November 2019. <https://www150.statcan.gc.ca/n1/pub/85-002-x/2018001/article/54973-eng.htm>

Outcomes for Sexual Assault Allegations



We do see a higher proportion of sexual assault allegations being taken seriously and investigated - but are more of the suspects being charged? Currently we don't have the data to definitively say.

Appendix B:

Risk of Gendered Data Loss

The release of gendered data is at risk, with OPP announcing in Sept of 2019 that "The Ontario Provincial Police will no longer publicly release the gender of the suspect or a victim of a crime."²⁰

Since understanding the gendered issues behind sexual assault relies on both having solid understanding of statistics for sexual assault as well as being able to compare to crimes overall, perhaps there is an opportunity to encourage the preservation of data collection and release.

It would be difficult to justify progress in moving the needle on gender violence without gendered data.

²⁰ Bañares, Ilya. 'OPP to no longer release gender of victims, suspects in crimes.' The Star. September 23, 2019. Accessed April 2020. <https://www.thestar.com/news/gta/2019/09/23/opp-to-no-longer-release-gender-of-victims-suspects-in-crimes.htm>

Appendix C:

Changes in Policing Practices

Another perspective for considering changes in practice is to look how WRPS responds to and classifies sexual assault allegations. To mirror the exploration in the report, we'll compare the data released for 2014 vs (the most recent) 2018.

When it comes to classifying the urgency of an occurrence, in 2018 all crimes overall as classified as immediate or urgent at a rate of 31%, whereas sex offence crimes are classified as immediate or urgent at a rate of 5%. This may point to that sexual assault may be reported retroactively, whereas other crimes can be reported in the midst of development. What is more interesting is that between 2014 and 2018, the rate at which crimes had a final classification of immediate or urgent increased by 49% (from 20.6% in 2014 to 30.6% in 2018), whereas for sex offences they increased by 57% (from 3.0% to 4.7%).

	2014	2018
All Crimes	<ul style="list-style-type: none">• 295,427 occurrences recorded• 17.2% initially classified as immediate or urgent• 20.6% final classification as immediate or urgent• 3.4% of crimes upgraded in urgency	<ul style="list-style-type: none">• 304,104 occurrences recorded• 20.2% initially classified as immediate or urgent• 30.6% final classification as immediate or urgent• 10.4% of crimes upgraded in urgency
Sexual Offence (9040-SEX OFFENCE)	<ul style="list-style-type: none">• 332 occurrences recorded• 3.3% initially classified as immediate or urgent• 3.0% final classification as immediate or urgent• 0.3% of crimes upgraded in urgency	<ul style="list-style-type: none">• 487 occurrences recorded• 4.5% initially classified as immediate or urgent• 4.7% final classification as immediate or urgent• 0.2% of crimes upgraded in urgency

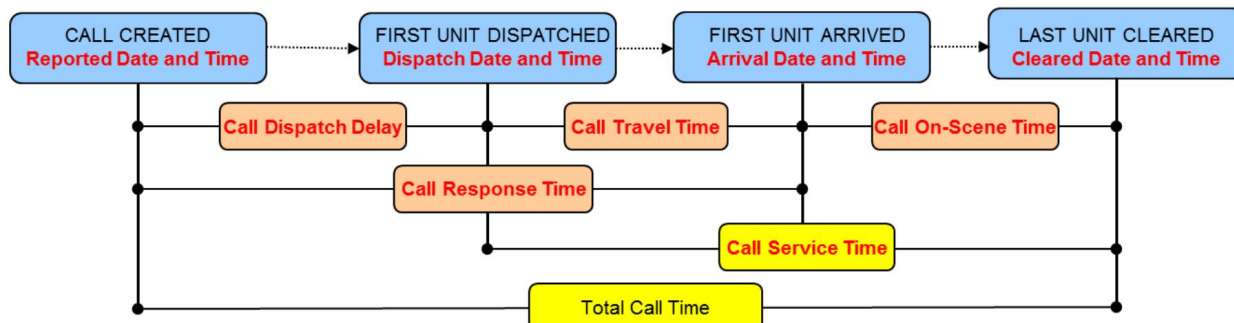
Keep in mind that the WRPS data source notes a limitation "Depending on the specific circumstances of the occurrence... the default priority may not get manually changed and may not always represent how WRPS responded to the actual Situation."

When it comes to response time, there's a couple of times we know: when the call initially came in, when an officer was dispatched, when the officer arrived, and when the case was cleared. Based on those, two important metrics to consider are the *call dispatch delay*: the time between when a call comes in and when a unit is dispatched, and the *call service time*: the time between the first unit bet. Note that these are defined only in cases when a unit is dispatched to the location of the crime.

²⁰ Bañares, Ilya. 'OPP to no longer release gender of victims, suspects in crimes.' The Star. September 23, 2019. Accessed April 2020. <https://www.thestar.com/news/gta/2019/09/23/opp-to-no-longer-release-gender-of-victims-suspects-in-crimes.htm>

APPENDIX B: WRPS Occurrence Data Mileposts and Time Intervals for Dispatched Calls

Note: Red text indicates Data Fields in WRPS Occurrence Data



Based on the time of dispatch, arrival and clearance, we can see that in 2014, sexual offence occurrences had a dispatch delay time 5.6 times longer than all crimes overall. In 2018, that rate decreased to sexual offence occurrences having a dispatch delay time 2.3 times longer than all crimes overall. This means that it takes longer for a report of a sexual offence to reach an officer and begin the investigation, possibly related to the lower rate of sexual offence crimes classified as urgent.

	2014	2018
All Crimes	<ul style="list-style-type: none"> 16 minutes average dispatch delay time 47 minutes average call service time 	<ul style="list-style-type: none"> 31 minutes average dispatch delay time 49 minutes average call service time
Sexual Offence (9040-SEX OFFENCE)	<ul style="list-style-type: none"> 1 hour 29 minutes average dispatch delay time 2 hrs 31 minutes average call service time 	<ul style="list-style-type: none"> 1 hour 12 minutes average dispatch delay time 2 hrs 20 minutes average call service time

When it comes to service time, in 2014 sexual offence occurrences had a service time 3.2 times that of all occurrences overall. In 2018, that rate dropped to sexual offence occurrences having a service time of 2.9 times that of all occurrences overall.

Appendix D:

Census Profile of Kitchener-Cambridge-Waterloo (2016), Labour Indicators

Characteristic	Kitchener-Cambridge-Waterloo			Ontario		
	Male	Female	%f	Male	Female	%f
Total - Population aged 15 years and over by Labour force status - 25% sample data	208,345	215,510	51%	5,342,755	5,695,680	52%
In the labour force	151,985	138,445	48%	3,689,625	3,452,055	48%
Employed	42,595	129,275	48%	3,414,255	3,197,895	48%
Unemployed	9,390	9,165	49%	275,370	254,160	48%
Not in the labour force	56,360	77,070	58%	1,653,130	2,243,630	58%
Participation rate	73%	64%		69%	61%	
Employment rate	68%	60%		64%	56%	
Unemployment rate	6%	7%		8%	7%	
Total population aged 15 years and over by work activity during the reference year - 25% sample data	208,350	215,510	51%	5,342,755	5,695,685	52%
Did not work	51,935	72,270	58%	1,561,475	2,134,755	58%
Worked	156,410	143,245	48%	3,781,280	3,560,925	48%
Worked full year; full time	94,335	70,525	43%	2,148,635	1,688,935	44%
Worked part year and/or part time	62,075	72,725	54%	1,632,645	1,871,995	53%
Average weeks worked in reference year	44.2	42.9		43.4	42.3	
Total labour force aged 15 years and over by class of worker - 25% sample data	151,985	138,440	48%	3,689,625	3,452,055	48%
Class of worker - not applicable	2,610	2,785	52%	81,735	89,315	52%
All classes of workers	149,375	135,660	48%	3,607,890	3,362,735	48%
Employee	132,410	124,665	48%	3,084,740	3,061,295	50%
Self-employed	16,965	10,995	39%	523,145	301,445	37%

Characteristic	Kitchener-Cambridge-Waterloo			Ontario		
	Male	Female	%f	Male	Female	%f
Total labour force population aged 15 years and over by occupation - National Occupational Classification (NOC) 2016 - 25% sample data	151,985	138,440	48%	3,689,625	3,452,050	48%
Occupation - not applicable	2,610	2,785	52%	81,735	89,315	52%
All occupations	149,375	135,655	48%	3,607,890	3,362,735	48%
0 Management occupations	18,590	11,620	38%	483,240	307,635	39%
1 Business; finance and administration occupations	12,475	30,035	71%	357,215	767,555	68%
2 Natural and applied sciences and related occupations	19,190	5,430	22%	399,195	116,915	23%
3 Health occupations	2,490	13,315	84%	90,495	356,550	80%
4 Occupations in education; law and social; community and government services	10,150	21,190	68%	265,075	566,265	68%
5 Occupations in art; culture; recreation and sport	3,165	4,320	58%	104,445	121,275	54%
6 Sales and service occupations	26,230	37,685	59%	709,375	922,710	57%
7 Trades; transport and equipment operators and related	37,770	2,580	6%	866,870	60,950	7%
8 Natural resources; agriculture and related production	3,105	1,135	27%	88,150	25,260	22%
9 Occupations in manufacturing and utilities	16,210	8,345	34%	243,835	117,620	33%
Total labour force population aged 15 years and over by Industry - North American Industry Classification System (NAICS) 2012 - 25% sample data	151,985	138,440	48%	3,689,625	3,452,050	48%
Industry - NAICS2012 - not applicable	2,610	2,785	52%	81,730	89,315	52%
All industry categories	149,375	135,655	48%	3,607,890	3,362,735	48%
11 Agriculture; forestry; fishing and hunting	1,880	1,290	41%	67,005	35,070	34%
21 Mining; quarrying; and oil and gas extraction	335	50	13%	27,920	4,415	14%
22 Utilities	840	225	21%	38,195	12,630	25%
23 Construction	16,600	2,220	12%	419,600	57,230	12%
31-33 Manufacturing	32,560	13,390	29%	482,800	200,530	29%
41 Wholesale trade	8,245	3,590	30%	178,945	91,800	34%
44-45 Retail trade	14,580	16,630	53%	367,175	416,365	53%
48-49 Transportation and warehousing	8,925	3,005	25%	242,045	87,190	26%
51 Information and cultural industries	4,600	3,515	43%	101,045	75,670	43%
52 Finance and insurance	6,420	11,180	64%	169,590	211,180	55%
53 Real estate and rental and leasing	2,460	2,260	48%	77,385	66,890	46%
54 Professional; scientific and technical services	12,640	9,010	42%	316,685	251,140	44%
55 Management of companies and enterprises	230	235	51%	5,290	7,075	57%
56 Administrative and support; waste management and remediation services	6,740	5,165	43%	190,210	148,430	44%
61 Educational services	8,390	16,140	66%	163,680	364,795	69%
62 Health care and social assistance	4,205	23,535	85%	134,270	620,275	82%
71 Arts; entertainment and recreation	2,360	2,270	49%	75,330	72,095	49%
72 Accommodation and food services	7,090	11,485	62%	201,260	276,805	58%
81 Other services (except public administration)	5,185	5,535	52%	133,220	163,745	55%
91 Public administration	5,080	4,915	49%	216,250	199,385	48%

Appendix E:

Court statistics of different geographical regions

Figure E1: Number of sexual assault cases from 2012 to 2019

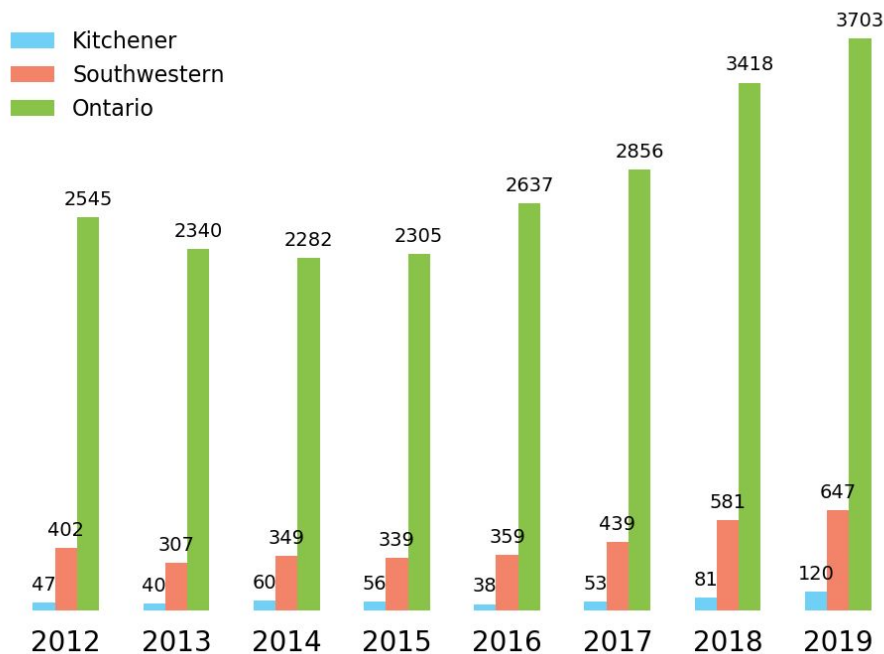


Figure E2: Sexual assault cases as a percentage of all cases from 2012 to 2019

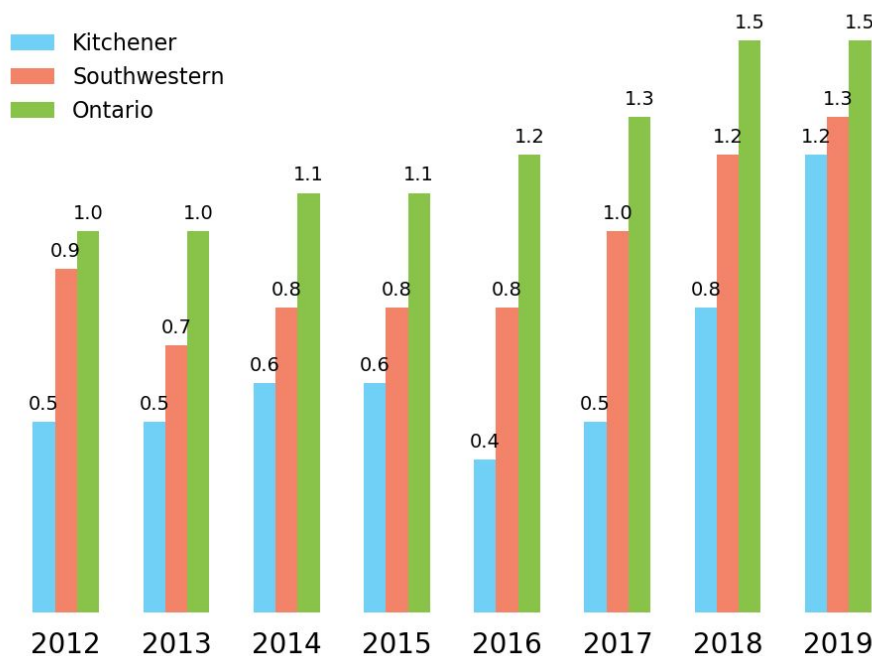


Figure E3: Number of disposed sexual assault cases from 2012 to 2019

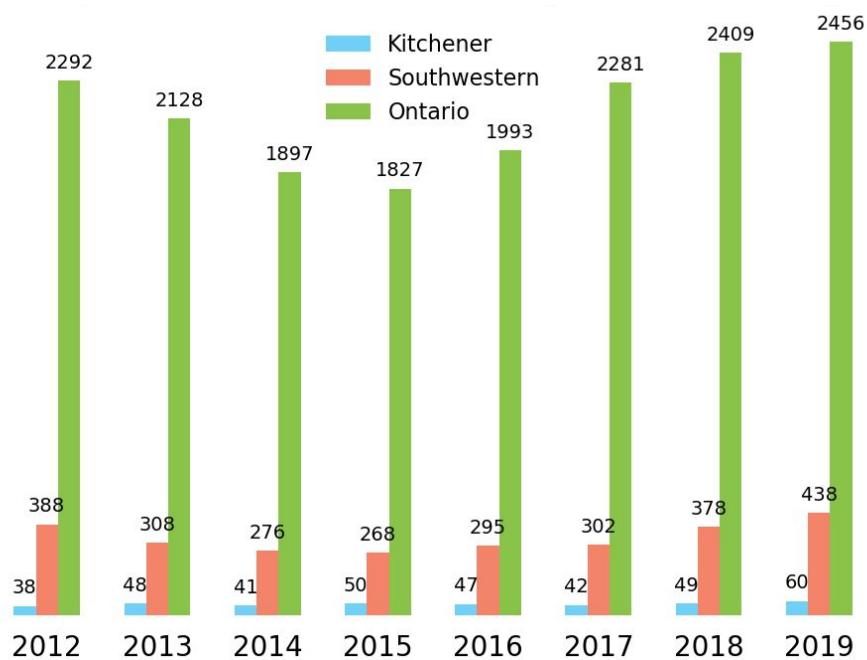


Figure E4: Number of pending sexual assault cases from 2012 to 2019

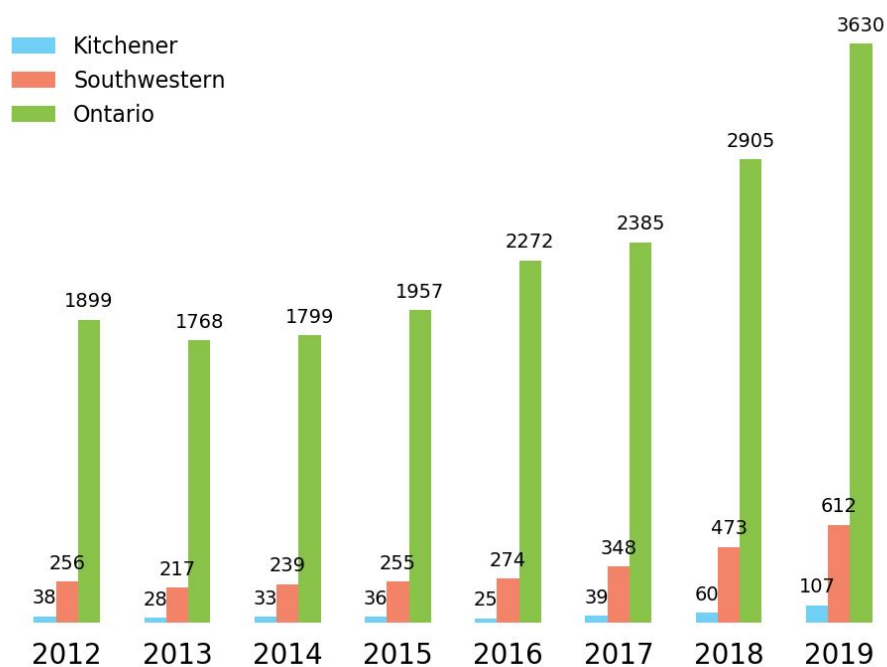


Figure E5: Sexual assault cases disposed at three different moments with respect to trial date from 2012 to 2019 as a percentage of total

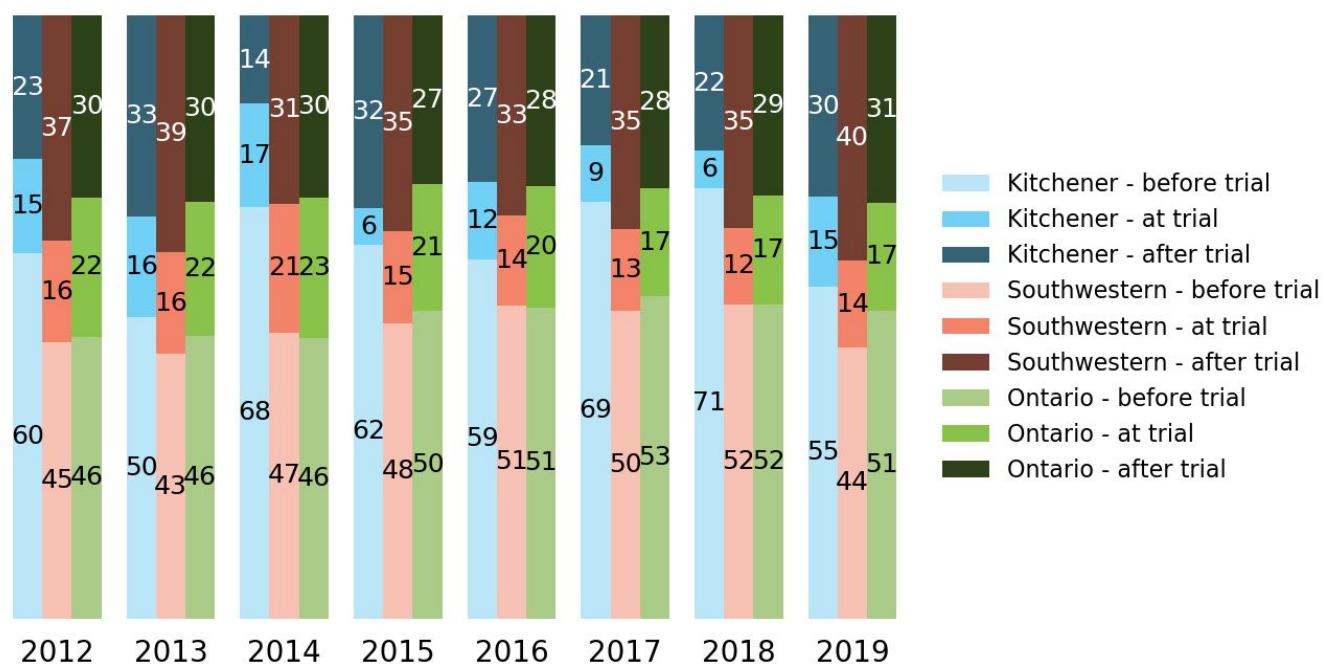
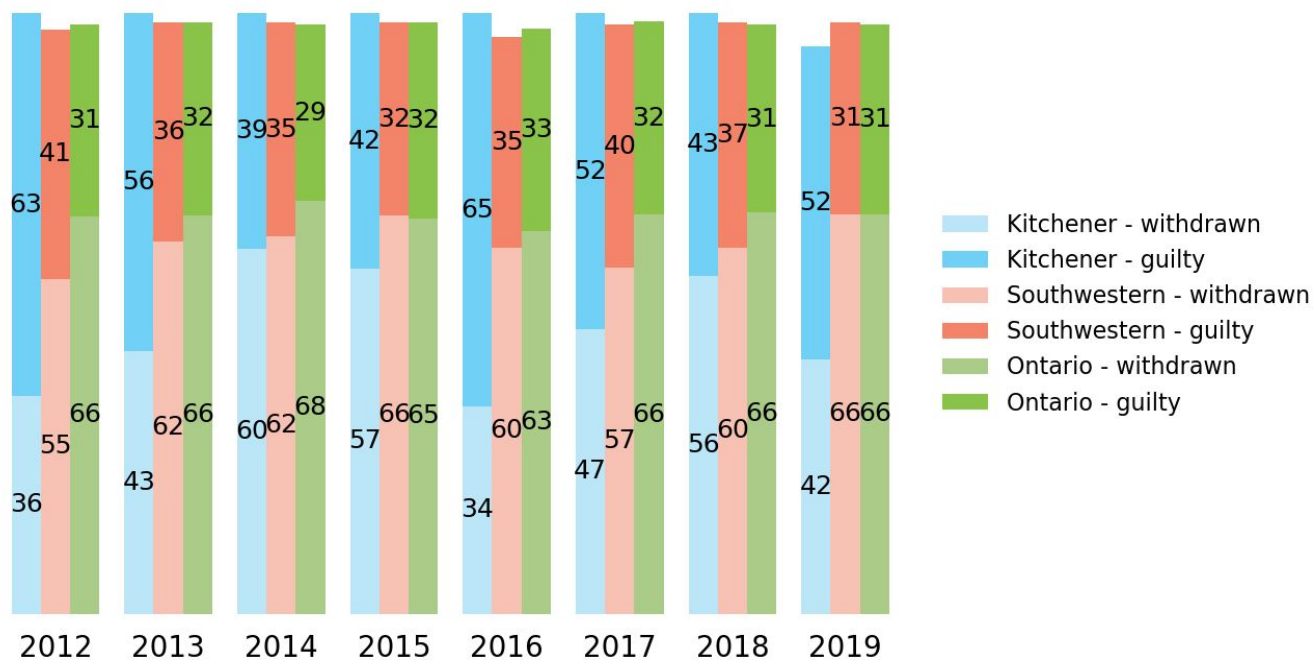


Figure E6: Percentage of sexual assault cases disposed with different outcomes from 2012 to 2019



Appendix F:

2016 Census Summary Statistics

The data has been extracted from the Statistics Canada website (<https://www12.statcan.gc.ca/>). This is summary data with singular data points and hence there is little except for some descriptive analytics and visualizations.

A storyboard of summary statistics is hosted on the Tableau public site:

https://public.tableau.com/views/2016CensusAnalysisforKCW/2016Canadiancensus?:display_count=y&origin=viz_share_link

There also exists an interactive summary dashboard which can be found in the link below:

https://public.tableau.com/views/2016CensusAnalysisforKCW/InteractiveDashboard?:display_count=y&origin=viz_share_link

Click on the region in the population graph and the other graphs will refresh with the numbers associated with the region.

TAKE AWAY: The township of Wellesley has an alarming percentage of people without a certificate, diploma, or degree. With the number of 44.3%, this is the highest amongst all of Canada.

Wellesley also has the lowest unemployment rate in Canada with only 2.3% of the population unemployed.

²⁰ Bañares, Ilya. 'OPP to no longer release gender of victims, suspects in crimes.' The Star. September 23, 2019. Accessed April 2020. <https://www.thestar.com/news/gta/2019/09/23/opp-to-no-longer-release-gender-of-victims-suspects-in-crimes.htm>

Appendix G:

Drivers of Prevalence of Low Income Among Women

The factors in the table below were evaluated for their impact on low income prevalence, using glmnet, an R package that fits a generalized linear model using penalized maximum likelihood. Factors which have a positive number next to them are associated with a higher prevalence of low income - factors which have a negative number indicate the opposite. The larger a number is, (in either positive or negative direction), the larger the influence it has on low income prevalence. Items without a number were tested, but a strong correlation was not detected. The statistical technique used avoids double counting effects that are correlated with each other. As a result, a data point that does not appear on this list does not necessarily have no effect, but rather, its effect is being captured by another data point on the list.

Variable	Coefficient
(Intercept)	-2.136100167
population	.
population_percent_m	.
population_percent_f	.
population_percent_age_0_14	.
population_percent_age_0_14_m	.
population_percent_age_0_14_f	.
population_percent_age_15_64	0.033298597
population_percent_age_15_64_m	.
population_percent_age_15_64_f	.
population_percent_age_65_plus	.
population_percent_age_65_plus_m	.
population_percent_age_65_plus_f	.
age_average	.
age_average_m	.
age_average_f	.
couple_families	.
lone_parent_families	0.019664047
lone_parent_families_percent_m	-0.007479403
lone_parent_families_percent_f	.
canadian_citizens_percent	0.146909409
canadian_citizens_percent_m	0.020184341
canadian_citizens_percent_f	0.070223343

Variable	Coefficient
non_immigrants_percent	.
non_immigrants_percent_m	.
non_immigrants_percent_f	0.015131955
immigrants_percent	.
immigrants_percent_m	.
immigrants_percent_f	.
non_permanent_residents_percent	0.070554874
non_permanent_residents_percent_m	0.026611499
non_permanent_residents_percent_f	0.038530027
aboriginal_identity_percent	.
aboriginal_identity_percent_m	0.007831056
aboriginal_identity_percent_f	.
non_aboriginal_identity_percent	-0.231247715
non_aboriginal_identity_percent_m	-0.101189392
non_aboriginal_identity_percent_f	-0.023377092
visible_minority_percent	0.102198985
visible_minority_percent_m	.
visible_minority_percent_f	.
non_visible_minority_percent	.
non_visible_minority_percent_m	-0.020093434
non_visible_minority_percent_f	-0.080265268
household_owners_percent	.
household_renters_percent	0.461945467
households_suitable_per_NOC_percent	.
households_not_suitable_per_NOC_percent	.
tenant_households_in_subsidized_housing_percent	0.113846267
tenant_households_spending_30_percent_more_of_income_on_shelter_percent	0.159432272
education_no_certificate_diploma_degree	0.035338679
education_no_certificate_diploma_degree_m	0.03688665
education_no_certificate_diploma_degree_f	.
education_secondary_diploma_orequivalent	.
education_secondary_diploma_orequivalent_m	.
education_secondary_diploma_orequivalent_f	.
education_postsecondary_certificate_diploma_degree	-0.131402379
education_postsecondary_certificate_diploma_degree_m	-0.046508503
education_postsecondary_certificate_diploma_degree_f	-0.003546846
labour_force_participation_rate	-0.038809174

Variable	Coefficient
labour_force_participation_rate_m	.
labour_force_participation_rate_f	-0.03996187
labour_force_employment_rate	.
labour_force_employment_rate_m	-0.03298684
labour_force_employment_rate_f	-0.016021792
labour_force_unemployment_rate	0.022990613
labour_force_unemployment_rate_m	.
labour_force_unemployment_rate_f	.

Using these drivers, Data for Good participants built a linear model to predict the expected low income prevalence among women in a census Dissemination Area (DA - commonly thought of as neighbourhoods). The model's predicted output was called "Benchmark Rate" - the amount of low income prevalence one would expect to see in a given neighborhood, based on that neighborhood's demographic information. At this point, neighbourhoods were grouped into four categories:

1. Areas where the low income rate was less prevalent and better than one would expect, using the model / benchmark
2. Areas where the low income rate was less prevalent and worse than one would expect, using the model / benchmark
3. Areas where the low income rate was prevalent and worse than one would expect, using the model / benchmark
4. Areas where the low income rate was prevalent and better than one would expect, using the model / benchmark

Low Income Prevalence among Women vs. Demographic Benchmark

Kitchener - Waterloo - Cambridge

