

CORRECTIONAL SERVICE CANADA

CHANGING LIVES. PROTECTING CANADIANS.

Forecasted and Actual Federal Custody Populations: 2017-2018

Recent population forecasts of federal custody populations appear to be viable and accurate.

Why we are doing this study

The Correctional Service of Canada (CSC) refreshed its institutional population forecasts in 2017. A previously developed forecasting model was applied to produce new population estimates from the end of March 2017 to the year-end of 2027. The following provides a status report on the accuracy of the new population estimates after one-year in 2018.

What we did

A forecasting database of weekly snapshots of institutional counts from 1990/91 to 2016/17 was derived from the CSC Offender Management System. The historical time series in-custody population database was used to develop alternative and provisional scenarios for men and women up to 2027. Projections for men and women offenders in federal custody were estimated separately, as historical trends for these two groups differ significantly.

SAS/ETS software was used for exploring and analyzing univariate time series data and to select the best-fitting model. Computing estimates for each security level across the five administrative regions of CSC added precision by taking into account variations that occur over time with these sub-populations.

What we found

Population forecasts are taken to the last Tuesday midnight institutional count of the fiscal year. On 27 March 2018, the national actual "physically-in" count was reported to be 13,967. By fiscal year-end 2017-18, the national forecast was estimated to be 13,942. Overall, there was found to be a slight forecast difference of -25, a very narrow margin of error was obtained -0.18% (or <.5%).

With respect to men in-custody on 27 March 2018, the actual count was reported to be 13,288. For fiscal year-end 2017-18, the forecast for men was estimated to be 13,258. For men, there was found to be a smaller forecast difference of -30, similarly a very thin margin of error was obtained -0.23% (or <.5%).

In relation to women in-custody on 27 March 2018, the actual count was reported to be 679. For fiscal year-end 2017-18, the forecast for women was estimated to be 684. For women, there was found to be a small forecast difference of +5, again a narrow margin of error was obtained +0.73% (or < 1%).

For regional forecasts, the smaller population bases necessarily increase the forecast to observed differences. Variation (+/-) in differences was observed across the regions. Not surprisingly, differences were relatively small and cumulatively offsetting at the national level.

National and Regional Population Forecasts 2017-2018

Fiscal Year-end	Forecast	Observed Value	Forecast to Observed Difference	% Error
Atlantic	1,318	1,300	+18	+1.36
Quebec	2,997	2,988	+9	+0.30
Ontario	3,424	3,513	-89	-2.60
Prairies	4,062	3,998	+64	+1.58
Pacific	2,141	2,168	-27	-1.26
National	13,942	13,967	-25	-0.18
Men	13,258	13,288	-30	-0.23
Women	684	679	+5	+0.73

What it means

All-in-all, the national institutional count is reflective of the end-of-year national forecast estimates. As had been anticipated, by year end the actual count landed proximal to the forecasted estimates. At this time, it appears that the current approach to CSC population forecasting exercises is methodologically sound and continued evaluation assists in the development of future models.

For more information

Please e-mail the [Research Branch](#) or contact us by phone at (613) 995-3975.

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