

# GRADUATE SEMINAR

Hira Nadeem

## Confidence Intervals for a Ratio of Binomial Proportions Based on Direct and Inverse Sampling Schemes

*PhD Student supervised by Dr. Ejaz Ahmed and Dr. Andrei Volodin*

Date: Thursday, August 6<sup>th</sup>, 2020

Time: 3:00 – 4:00 pm

Location: Zoom

**Abstract:** A general problem of the interval estimation for a ratio of two proportions  $p_1/p_2$  according to data from two independent samples is considered. Each sample may be obtained in the framework of direct or inverse binomial sampling. Since methods of constructing confidence intervals in the situations when values for the both samples are obtained for identical sample schemes (for only direct or only inverse binomial sampling) are already developed and well known, the main purpose of this paper is the investigation of constructing confidence intervals in two cases that correspond to different sampling schemes (one is direct, another is inverse). In this situation it is possible to plan the sample size for the second sample according to the number of successes in the first sample. This, as it is shown by the results of statistical modeling, provides the intervals with confidence level which closer to the nominal value.

University  
of Regina

