

College of Engineering and Physical Sciences

SCHOOL OF COMPUTER SCIENCE

MSc Defense

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INVESTIGATING PERCEPTIONS, MOTIVATIONS, AND CHALLENGES IN THE ADOPTION OF PRECISION LIVESTOCK FARMING IN THE BEEF INDUSTRY

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ABSTRACT:

Precision Livestock Farming (PLF) aims to automate and optimize the detection of illness, injury, and reproductive cycles in livestock through real-time automated data collection, analysis and reporting. While many researchers and farmers agree that PLF can help optimize farming practices and outcomes, in certain farming sectors there has been low adoption rates of PLF technologies. This research investigated this low adoption in one key sector of the Canadian agricultural industry: beef farming. The study was carried out from the point of view of two different stakeholders, farmers and veterinarians, to enable innovators and PLF researchers to implement user-centric and cost-effective technologies. The study was centred on the beef feedlot sector in Ontario, Canada to give us initial insights into the adoption of digital technology in the beef industry in Canada. The feedlot subsection of beef industry was chosen due to the confined nature of their operations, which makes them more likely to adopt existing technology. This research will serve as a pilot study for a Canada-wide study. Data from 10 interviews and 30 surveys were collected. Results of the study revealed that several key factors that can hinder adoption of PLF technologies in beef industry include perceived relevance of the technology: lack of awareness of available technologies and their capabilities, trust in the technology, level of familiarity and comfort with technology due to age and education, cost, and return on investment. These insights have a number of implications for researchers and industry stakeholders developing PLF technologies that are discussed in the thesis.