Remote Controlled: Technology and the Canadian Mining Sector - Part II: Systematic Review Findings

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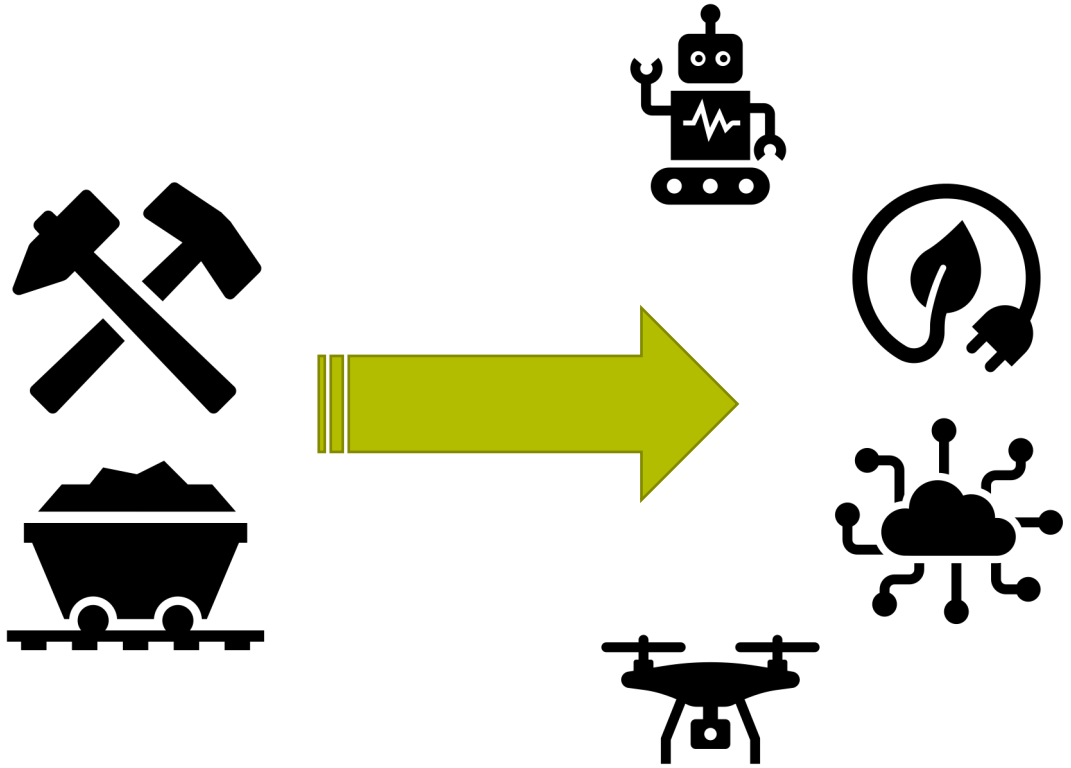
Introduction

- Mining sector is currently in an “age of disruption” (Deloitte 2015)
- Potential to fundamentally reshape the future of work and the development of mining communities and regions
- Gap in the literature on current trends, drivers, and barriers



Objectives & Background

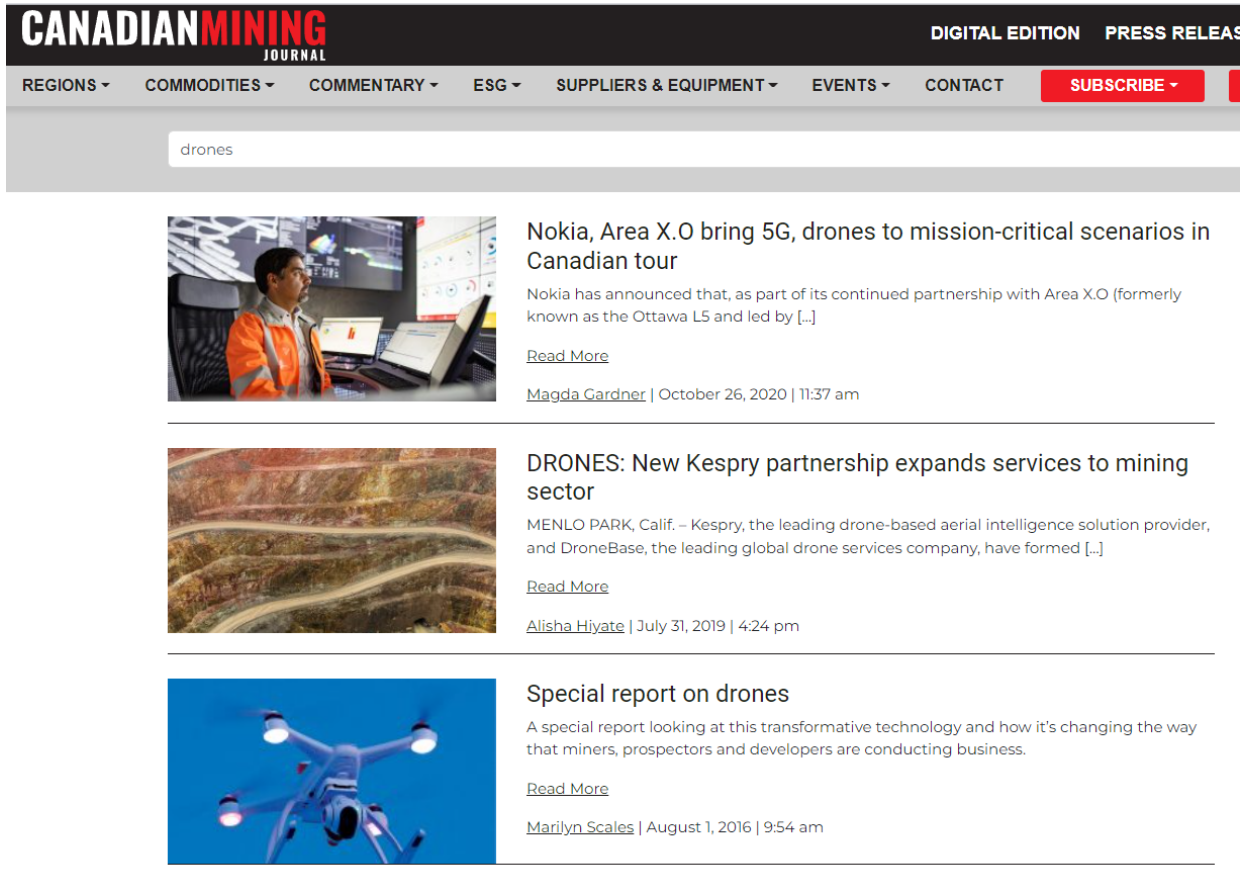
- **Objective**: conduct a systematic review of articles in the *Canadian Mining Journa*l to assess the main drivers, barriers, and opportunities for technology adoption in the Canadian mining sector over the last 5 years

- Remote Controlled Mining Project
  - National SSHRC-funded project
  - Led by Heather Hall (University of Waterloo); Sarah Breen (Selkirk College); Ken Coates (University of Saskatchewan); and Kelly Vodden (Memorial University)

METHODOLOGY

Methodology

- Systematic Review
  - Synthesis of relevant articles on technologies being implemented, adopted, and discussed in the Canadian context
- Extracted article details, coded by categories, and grouped into themes
- Member checks for reliability



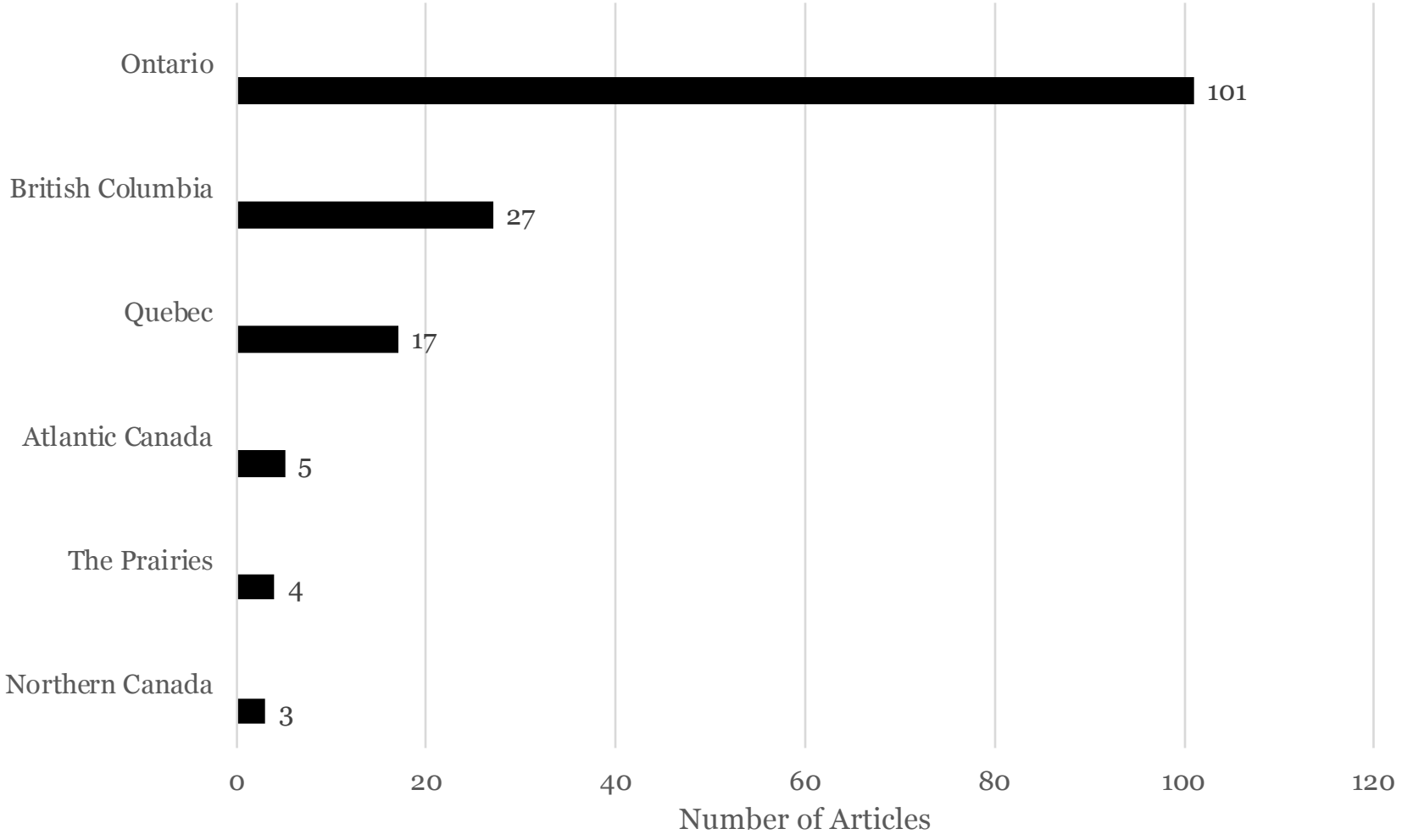
PRELIMINARY RESULTS

Technologies, Geography, Drivers, Barriers

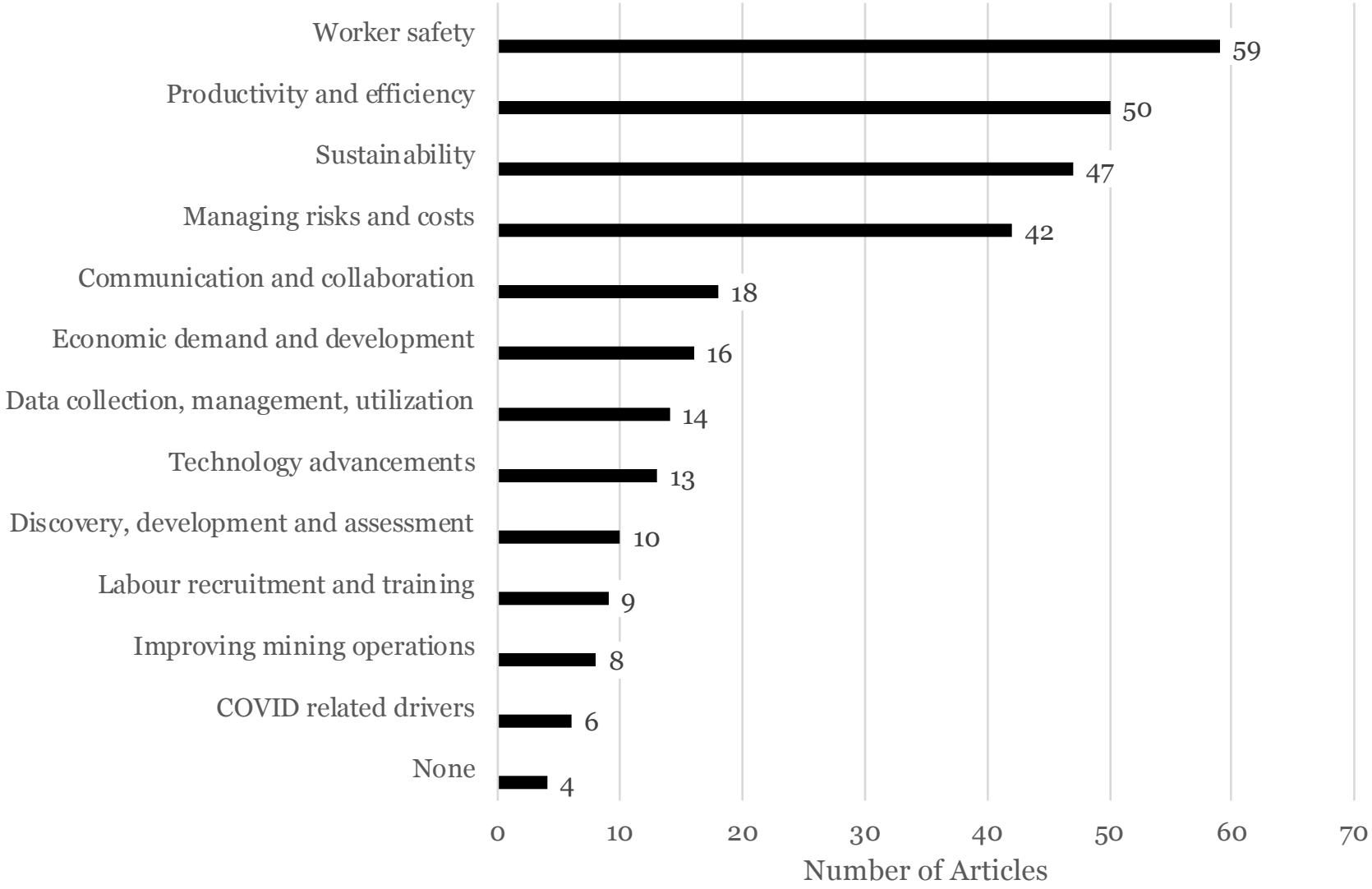
Technologies

- Electric Vehicles (47)
- Sensors (34)
- Artificial Intelligence (25)
- Autonomous Equipment (23)

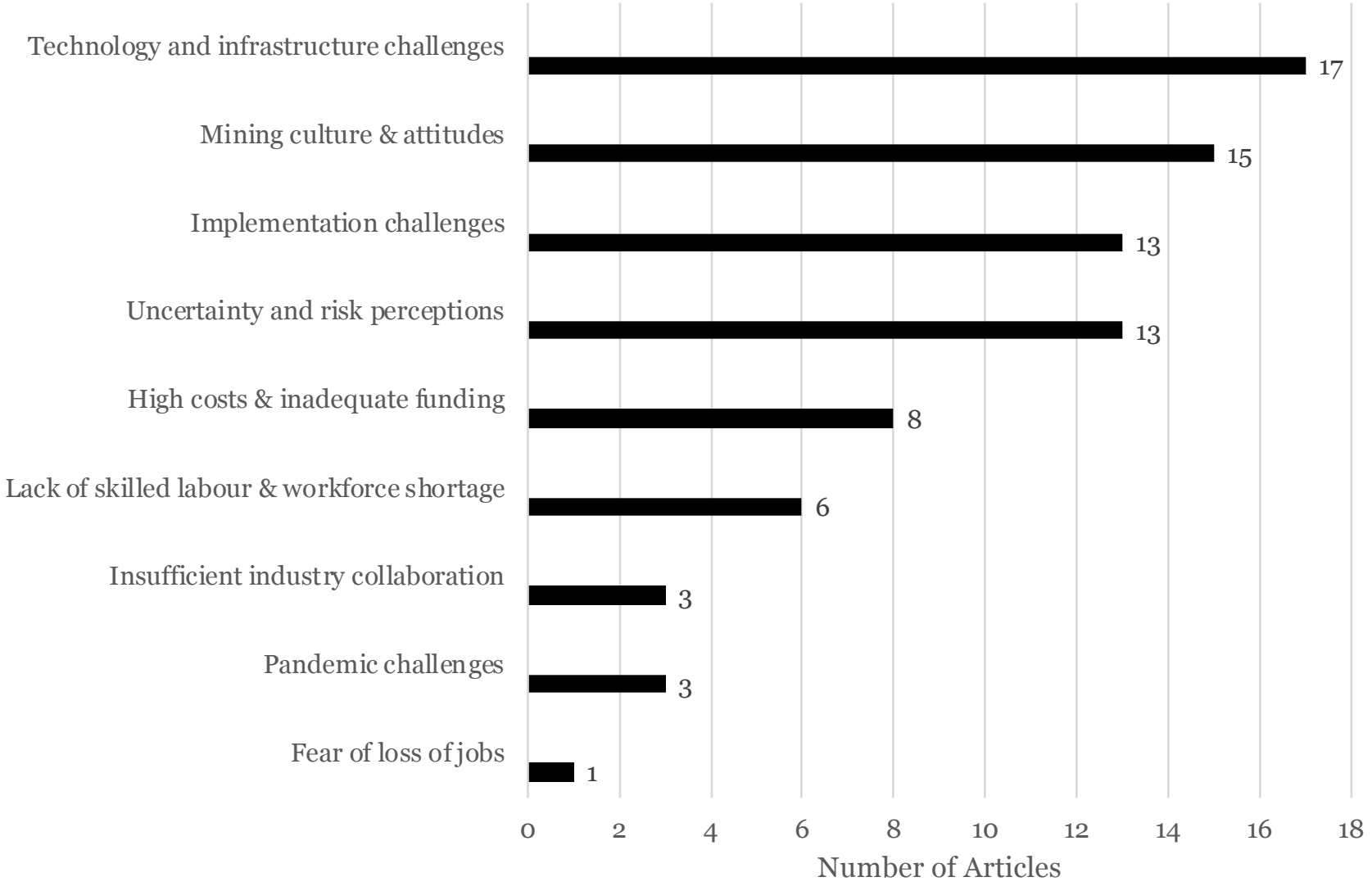
Geography


Ontario
101
British Columbia
27
Quebec
17
Atlantic Canada
5
The Prairies
4
Northern Canada
3
0
20
40
60
80
100
120
Number of Articles

Drivers of Technology Adoption



Barriers to Technology Adoption



DISCUSSION & CONCLUSIONS

Discussion & Conclusions

- Each technology has its own set of unique drivers and barriers
- Technology adoption is context specific
- Worker safety, productivity & efficiency, and sustainability are key drivers
- Limited discussion on barriers is a missed opportunity

Thank You & Questions

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Project Website: https://uwaterloo.ca/disruptive-technologies-economic-development/

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