



# COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

SCHOOL OF COMPUTER SCIENCE

## PhD Defence

**Wednesday December 14, 2022 at 12pm via Zoom**

**Ali Al Hadwer**

*A Model to Investigate the Factors Influencing the Decision of Adopting Cloud-based Big Data Analytics in Higher Education: The Case of Saudi Universities*

**Chair:** Dr. Joe Sawada

**Advisor:** Dr. Dan Gillis

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### **Abstract:**

Cloud-based Big Data Analytics (CBDA) is an emerging application of data analytics, and its successful adoption in the higher education sector leads to valuable outcomes that improve teaching, learning, research and policy-making. Yet, accepting and using CBDA as a promising innovation for informed decision-making in this sector is falling behind. Like any innovation, CBDA's full capabilities can be reached only once the factors that facilitate or hinder its adoption are identified.

This research proposes a CBDA adoption framework, based on a thorough literature review of cloud computing adoption by organizations. All technical and non-technical factors that affect the adoption of cloud technologies have been identified and classified according to the T.O.E. theoretical framework, which has been found to be the most suitable framework for this research.

The context of Saudi Arabian universities has been chosen to empirically test and validate the proposed model, while solving a practical problem associated with the government's efforts to shift the higher education sector to the cloud service paradigm. The government aims to cut costs and improve education policy, which has become more demanding during the recent COVID-19 pandemic.

The results from this study indicate that top management support, a non-technical factor, is the main driver for CBDA adoption among Saudi universities, and that relative advantage is not the main predictor of CBDA adoption, which is contradictory to much of the literature. As a result of these investigations, suggestions were identified for future research, and recommendations were laid out to support decision makers toward successful CBDA adoption.