**Assignment 1: Practicing research skills.**

Ankit Sharma

School of Business, St. Lawrence College

Course name: Math 5002 Qualitative research methods

Prof. Indrani Karmakar.

Due Date: 22nd May 2023

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Serial Number** | **Article Name** | **Research topics** | **Research questions** | **Hypothesis** | **Methodology** | **Research findings** | **Limitations** |
| 1. | Cloud computing procurement and implementation: Lessons learnt from a United Kingdom case study | Cloud computing (CC) implementation in the United Kingdom Local Authority (UKLA) within the public sector. | How does the implementation of Cloud Computing (CC) in the UK Public Sector contribute to improving IT agility, infrastructure, and resilience? | Cloud Computing implementation will bring benefits such as easier access, increased security, and reduced maintenance | Grounded Theory | Aimed to understand cloud computing in the case organization through concept discovery. | IT support staff.  Security and privacy risks |
| 2. | Automatic Database Index Tuning  Using Machine Learning | Index selection using ML classification techniques | How can ML classification techniques be applied to perform index selection based on column properties and usage statistics? | Identify optimal indexes.  Predict future database usage. | Face to Face Interviews | Index Selection module.  Workload Forecast Model. | May not be universally applicable. Performance may vary across different databases and scenario. |

**Summary:** Both articles focus on the implementation of advanced technologies in different contexts. The first article explores the adoption of Cloud Computing (CC) in a United Kingdom Public Sector organization, highlighting its benefits such as faster implementation, easier access, increased resilience, improved agility, reduced costs, improved security, and reduced maintenance and support. This article uses Grounded theory, a field-based discovery qualitative research methodology.

The second article presents a research study on improving database performance through an automatic index-tuning model using machine learning (ML). The model considers future usage, column properties, and query operations to enhance index adaptability to variable workloads. The research methodology involves qualitative analysis through interviews with database professionals, data collection by analyzing existing indexes, and thematic analysis. The first article focuses on the implementation of Cloud Computing (CC) in a public sector organization, while the second article presents a research study on improving database performance through an automatic index-tuning model using machine learning (ML).

In conclusion, both articles emphasize the transformative potential of advanced technologies in different contexts, offering insights into their advantages, implementation strategies, and potential limitations.

**References**

Jones, S. B. (2015). Cloud computing procurement and implementation: Lessons learnt from a United Kingdom case study. *International Journal of Information Management*, *35*(6), 712–716. <https://doi.org/10.1016/j.ijinfomgt.2015.07.007>

*Methodology: Automatic Database Index Tuning Using Machine Learning*. (2021, November 1). IEEE Conference Publication | IEEE Xplore. <https://ieeexplore.ieee.org/abstract/document/9719526>