Technological Advancements on Selected Accounting Practices: A Study on Big data Analytics, Automation, and Artificial Intelligence in Sri Lanka

Thuduwe Kankanamge Dinush Madushanka

(229118L)

Degree of Master of Business Administration in Information Technology

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

August 2024

Technological Advancements on Selected Accounting Practices: A Study on Big data Analytics, Automation, and Artificial Intelligence in Sri Lanka

Thuduwe Kankanamge Dinush Madushanka

(229118L)

The dissertation was submitted to the Department of Computer Science and Engineering of the University of Moratuwa in partial fulfilment of the requirement for the Degree of Master of Business Administration in Information Technology.

Department of Computer Science and Engineering

University of Moratuwa

Sri Lanka

August 2024

DECLARATION

I declare that this is my own work, and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

Also, I hereby grant to University of Moratuwa the non-exclusive right to reproduce and distribute my thesis/dissertation, in whole or in part in print, electronic or other medium. I retain the right to use this content in whole or part in future works (such as articles or books).

T K Dinush Madushanka

Date:2024-08-22

The above candidate has carried out research for the Masters thesis under my supervision.

…….. 22.08.2024

(Dr. Adeesha Wijayasiri) Date

Signature of the Supervisor

COPYRIGHT STATEMENT

ABSTRACT

Technology has been shaping the world day by day with modern inventions. Individuals, organizations, and industries have changed according to developments. Big data analytics, automation, and artificial intelligence (AI) are in the process of changing accounting practices continuously and embracing the profession widely. Though there are higher interventions, the impact of these technologies on efficiency, accuracy, and productivity of accounting practices remains unclear. By identifying the level of impact, organizations can actively use these technological advancements in operations. Further, it helps to formulate strategies and maintains its competitive edge.

Objectives are to identify the current integration of technological advancements in accounting practices, investigate the efficiency, accuracy, and productivity of these technologies, identify the challenges and barriers that arise when integrating these technologies, to come up with strategies to overcome challenges, and increase integration of technological advancements.

Primarily integration of big data analytics tools and AI seems low with accounting practices. Main issues with lower integration are lack of skilled personnel and cost and resource constraints. Big data analytics tools are mainly used for data visualizations and AI use of predictive analytics for financial decisions. However, automation is widely used by accounting professionals.

To investigate the efficiency, accuracy, and productivity of technological advancements, hypothesis was developed and tested. Outcomes show, integration of big data analytics tools significantly increases the efficiency of financial reporting, integration of automation significantly increases the accuracy of financial data and information, and integrated AI software significantly increases productivity of professionals. Therefore, organizations need to prepare their future and strategies to get the most from these advancements.

Main challenges and barriers to integration of technological advancements are lack of technical skills and expertise, change management and user resistance, and data quality and standardization issues. To overcome those challenges. there must be training and developments, collaborations with industry professionals, partnering with technology vendors, and standardizing data and systems

This study highlights the need for enhanced integration of Big Data Analytics, Automation, and AI in selected accounting practices. Addressing challenges like skill shortages, change management, user resistance, and data standardization can significantly boost integration. Organizations must invest in training and strategic partnerships to fully capitalize on these technological advancements.

Keywords: Accounting, big data analytics, automation, artificial intelligence, accountants.

ACKNOWLEDGEMENT

I would like to thank key people and organizations for helping me complete my thesis within the given time and providing invaluable support and guidance.

First and foremost, my gratitude and appreciation go to Dr Buddika Karunaratne who helped me to successfully complete the study and provided expert knowledge and guidance. Feedback which you have given throughout the time is truly inspiring.

Also, I am grateful to Dr Kutila Gunasekera and Dr Adeesha Wijayasiri who have given assistance and provided feedback to refine the study to better way. Also, I need to express my acknowledgement to the University of Moratuwa which provides necessary resources and support throughout the study.

Further, I would like to express my thanks to the accounting professionals who have participated in answering the questionnaire and providing useful information. I deeply appreciate your contributions to the study.

Finally, I would like to thank my wife and my friends in MBA batch who assisted me in several ways.

Thank you all for your contributions, without which this thesis would not have been possible.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

AI = Artificial Intelligence

RPA = Robotic Process Automation