

UNIVERSITI TEKNOLOGI MARA

**TECHNOLOGY, ORGANIZATION
AND ENVIRONMENT AS
STRATEGIC FACTORS OF BIG
DATA ANALYTICS READINESS AND
ACQUISITION INTENTION TO
ADOPT BIG DATA ANALYTICS IN
MALAYSIAN LIBRARIES**

MOHAMAD SALBIHAN BIN SALMAN

Thesis submitted in fulfilment
of the requirements for the degree of
Doctor of Philosophy
(Information Management)

College of Computing, Informatics and Mathematics

November 2023

ABSTRACT

As we interact more online, the amount of data in Malaysian libraries always increases. With the large amount of data created, this phenomenon has created the phenomenon of big data (BD). Data analytics using BD can assist libraries in gaining actionable insights. Looking for a new research setting, big data analytics in Malaysian libraries is the central theme of this study. The discussion related to the theme has been well documented to understand the subject matter. The researcher also unveiled the TOE factor as a basis for the intention to adopt BDA. The study has identified several research gaps that led to this study. In current practice, BDA in Malaysian libraries is still new, and only a few libraries are using it. Most of the data has only been managed using descriptive analysis and is not well organised for decision-making. The limited amount of research pertaining to big data analytics (BDA) within the domain of libraries has resulted in a dearth of empirical studies examining the application of BDA in the field of library and information science. Hence, there is a lack of established theories, models, and frameworks to which one can refer. As a result, the Malaysian libraries lack reference sources to be used as guides. Besides that, the futility of previous studies in providing evidence on the relationship between TOE, BDAR, and the intention to adopt BDA. Moreover, no framework consisting of the TOE, BDAR, and AITABDA has ever existed for library research. With that, four main objectives were derived, namely, to determine the TOE for BDAR in Malaysian libraries, to identify the level of BDAR in Malaysian libraries, to determine the effect of TOE on BDAR in Malaysian libraries, and to determine the effect of BDAR on the acquisition intention to adopt BDA. In the context of this study, the proposed dimensions to study TOE and BDAR are focusing on the effects of each of the sub-dimensions proposed in TOE. There are four sub-dimensions for the technology factor, which are ICT infrastructure, security, data scalability, and reliability. For organization factors, three sub-dimensions were proposed and adopted, namely management support, magnitude, and budgeting. Besides that, three sub-dimensions have also been proposed for environmental factors: operational acceptance, culture, and talents. To look at the relationship between BDAR and acquisition intention to adopt BDA, three main cores of BDAR were adapted from the previous study. A set of questionnaires was distributed right after the pre-testing and pilot testing of the instrument. The questionnaire was distributed to three types of libraries: academic libraries, public libraries, and special libraries. SPSS version 22 was used to analyse the first and second objectives. In addition, the researcher used SmartPLS version 3 to fulfil the third and fourth objectives. The initial measurement analysis was conducted to identify the problematic items in the proposed framework. The structural model analysis indicated that the proposed relationship between the dimensions is significant between TOE and BDAR and BDAR and AITABDA. With that, this study has offered three contributions in the categories of empirical contribution, theoretical contribution, and practical contribution. The study provides tested empirical evidence of the relationship between Malaysian libraries. The proposed framework may serve as guidance for future researchers to conduct further studies on TOE, BDA, and AITABDA. Moreover, the instrument developed and the analysis can be reused to measure the level of TOE and BDA, among others, in archives, record centres, museums, etc.

ACKNOWLEDGEMENT

Alhamdulillah,

I would like to pay my gratitude to Allah Almighty for your graciousness and kindness to endow me the strength and patience to complete this humble piece of research.

First and foremost, I would like to dedicate my sincere gratitude to Associate Professor Dr. Mad Khir Johari Abdullah Sani, and Dr. Noor Zaidi Sahid, my supervisor and co-supervisor for their continued support during my PhD journey. Their expertise and experience have guided me to stay focus and eager to finish this research. To my mother, and to my two sons Muhammad Izz Anaqi and Muhammad Izz Aydeen, thank you for the prayer and the spirit burner for my success of this journey. My thanks and appreciation also go to Madam Mazwani Ayu Mazlan for her support, motivation and friendship. Special thanks also go to Dr. Mohd Helmi Masor@Mansor for your coercion, which caused me to continue my studies.

Thank you for your cooperation during my data collection. Not to be forgotten are the friends who came to support me as I conducted this research. God bless you all for your efforts.

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CHAPTER 1

INTRODUCTION

1.1 Overview

The context for this research is laid forth in extensive detail throughout the first chapter, which is organised into ten distinct sections. Table 1.1 is an explanation of the specifics of the plans for this research project. This chapter begins with a summary that can be found in Section 1.1. In sections 1.2 and 1.3, respectively, this research delves into the introduction and background of the study libraries that it seeks to investigate. Following that, sections 1.4, 1.5, and 1.6 present problem statement, research questions and aims and objectives. Significant of the study, scope of study, writing organizations and chapter summary are all detailed in sections 1.7, 1.8, 1.9 and 1.10 of the report.

Table 1.1
The Outline of Chapter One

Subtopic	Content Outline
1.1	Overview
1.2	Introduction
1.3	Background of the Study Libraries
1.4	Problem statement
1.5	Research questions
1.6	Aims and Objectives
1.7	Significant of the Study
1.8	Scope of the Study
1.9	Chapter Summary

1.2 Introduction

Since the beginning of the 2010s, a new digital transformation in society, government, and business has been made possible by big data due to the explosive growth of data caused by information and communications technologies (ICTs). This includes social media, mobile content, and business informatics (Accenture, 2014). With the development of technologies, such as the Internet of Things (IoT), cloud computing, and three-dimensional (3D) multimedia, "big data" is expected to become more than just a phenomenon or a trend in the field of information technology. Numerous research establishments and consulting companies anticipate that big data