BUSINESS ANALYTICS
USING MICROSOFT POWER BI

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PREFACE

Universiti Teknologi PETRONAS (UTP) commenced on delving into this subject for undergraduate students to provide students with a better understanding of Business Analytics. Business Analytics carries a broad meaning, and it requires one to be well prepared and have a deep understanding to be a data scientist. Thus, we gathered many talented professionals to work on this book before delivering it to future researchers (students). Through ample discussion by discussion, reading and researching, we finally managed to define what Business Analytics are all about and how it would be interpreted with Microsoft Power BI through this Business Analytics using Power BI.

This book is the outcome of efforts and contributions from several CeRDaS (Centre of Research and Data Science) members with the support of the Computer Science Department, UTP. First and foremost, our sincerest gratitude goes to UTP Press for the opportunity they gave us to publish this book under their publication. It may seem impossible at the beginning but with their acceptance and patience, the publication of this book came true. Special thanks to the lecturers, researchers, and contributors who have spent their time to share and elaborate ideas during the progress of this book. Your expertise and suggestions are appreciated.

We felt honored and grateful for the guidance that we received in reviewing and improving the content of this book and thank to M Hafizul Afifi and Anis for their contribution. Last but not least, thank you to whoever made time to read this book.

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FOREWORD

Technological innovations and advancement in everyday practice have led to an increasingly growing new content, new data, and new source of knowledge all around us. However, in describing it, Big Data phenomenon is more current, more widespread, and increasingly significant. Big Data provides huge potentials for value: innovative perspectives, a deeper understanding of the challenges, and innumerable opportunities for predicting and even shaping the future. However, not all researched intensely used statistical analyses.

Business Analytics has an immense utility potential: groundbreaking perspectives, deeper perception of challenges, and endless predictive and even future-shaping possibilities. Although applying Big Data practice to Business Analytics is a valuable distinguishing tactic today, it will become an expected core competence in the not-so-distant future.

The book covers the fundamental of Power BI and encompasses the progressive features of Power BI such as the language of how to create efficient data sets, query, common mistakes and errors, dashboards, etc. This book focuses mainly on the amplification of the viability of Power BI with the aid of Excel and Vlookup. It provides the best practice for designing a report of data analytics and serves as a guidance for a beginner to use Power BI for business analytics.

INTRODUCTION

Business analytics is a technique to collect, organise, analyse, and research market data and turn data into business knowledge through statistic models and iterative methodologies [1]. Business analytics seeks to identify the usable data sets and use them for problem-solving and performance, quality, and sales development. Extensive data, mathematical research, and computer management were utilised for business analytics to drive progress in the enterprise [2]. An essential part of business analytic is predictive modelling, as it includes knowledge used in the development of mathematical models. Via these models, outcomes can be forecasted and educated decision-making can be made. Business analytics may allow realistic recommendations on addressing problems and developing companies through learning from internal results [3].

Business researchers use advanced statistics, predictive modelling, and statistical simulations to establish approaches for evidence-driven problems. They can use analytics, information systems, informatics, and operational research to extend the knowledge of broad data sets and artificial intelligence, deep learning, and neural networks through available data and trends for the micro-segments. Such knowledge can then be leveraged to predict future consumer behaviour accurately or market trends and recommend measures to help consumers achieve the desired goal.

Power BI is one kind of Microsoft Business Intelligence tool [4] that offers data analysis with interactive visualisations interfaces. It provides interesting reports and dashboards with drag and drop features and most importantly, able to handle large files that are often superior to Excel. These business intelligence tools were developed to cater to technological needs due to the business's growth which makes handling a large number of data-generating regularly difficult. Its automatic setup of data refresh is one of the best features to allow published reports to be retrieved and analysed quickly.

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