

Analyzing the Role of Data Analytics in Business Decision Making in NEOM

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1. Chapter 1: Introduction

1.1. Research Background

The current business landscape is undergoing significant transformation driven by the rapid evolution of technology, especially in the field of data analytics. Organizations in many businesses and industries have been leveraging data-driven insights to enhance their decision making and improve their operational efficiency as well as strengthen their competitive position and gain a competitive advantage. Data analytics is a very effective tool in smart cities like NEOM.

NEOM is a smart city built at the northwest coast of Saudi Arabia. It was launched in 2017 to be a hub for innovation, artificial intelligence, and digital transformation where real-time data analytics is integrated into the business decision making process within renewable energy, tourism, healthcare, and logistics sectors.

According to McAfee and Brynjolfsson (2012) data-driven organizations exceed their competitors by making more informed strategic decisions. Furthermore, Davenport and Harris (2017) emphasize that organizations in rapidly evolving markets can enhance operational efficiency, improve customer engagement, and gain a competitive advantage by leveraging data analytics. The significance of data analytics in smart cities was discussed by Kitchen (2014). Additionally, Wamba et al. (2017) analyzed the role of big data in enhancing business intelligence and predictive decision-making organizations to gain competitive advantage. However, despite these extensive studies, there is a need to address the role of data analytics applications in business decision making within smart cities like NEOM.

Therefore, this study aims to analyze the role of data-driven decision-making in NEOM's unique business environment. It seeks to contribute valuable insights to

businesses operating within NEOM that can leverage data-driven decision-making to achieve long-term success.

1.2. Research Problem

Data analytics is changing business decision-making, but its applications in smart cities like NEOM are still unclear. Current research focuses on existing markets which leaves a gap in understanding how businesses in smart cities leverage data analytics.

1.2.1. Theoretical Gaps

Most researches examine data analytics in traditional business environments, but few focus on its role in smart cities like NEOM, where businesses operate within a new digital environment.

1.2.2. Practical Gaps

Although data analytics is an essential tool for decision-making in smart cities like NEOM, a lack of historical data impacts the effectiveness of data-driven decision-making.

Therefore, the research question is how is data analytics utilized in business decision-making within NEOM?

1.3. Research Significance

This study is significant on both theoretical and practical levels, providing an understanding on how businesses in NEOM utilize data analytics for decision.

1.3.1. At the theoretical level

Current research focuses on data analytics in existing markets, but few are about its role in smart cities like NEOM. This study fills that gap by examining how businesses in NEOM utilize data analytics in the decision-making process.

1.3.2. At the practical level

This study benefit stakeholder in businesses to gaining insights into best practices and challenges. Additionally, researchers can expand studies on data analytics in smart cities.

1.4. Research Questions

How is data analytics utilized in business decision-making within NEOM?

- How do businesses in NEOM collect and analyze data for decision-making?
- What types of data are most valuable for decision making in NEOM?
- What challenges do businesses NEOM face in utilizing data analytics for decision-making?
- How do data-driven decisions impact business operations in NEOM?

1.5. Research Objectives

To answer the research question, the following research objectives have been identified:

- To examine how businesses in NEOM collect and analyze data for decision making.
- To identify the key types of data used in decision making.
- To investigate the challenges businesses face in utilizing data analytics for decision making.
- To assess the impact of data-driven decision on the operations in NEOM.

1.6. Research Hypotheses

The following hypotheses are proposed relationship between variables:

- Businesses in NEOM face significant challenges in utilizing data analytics due to issues like data quality and integration.
- Data-driven decision-making has a positive effect on the operational efficiency and the business performance in NEOM.
- Businesses in NEOM get competitive edge over their rivals by integrating data analytics in their decision-making process.

1.7. Research Model

The research model is illustrated in Figure 1.

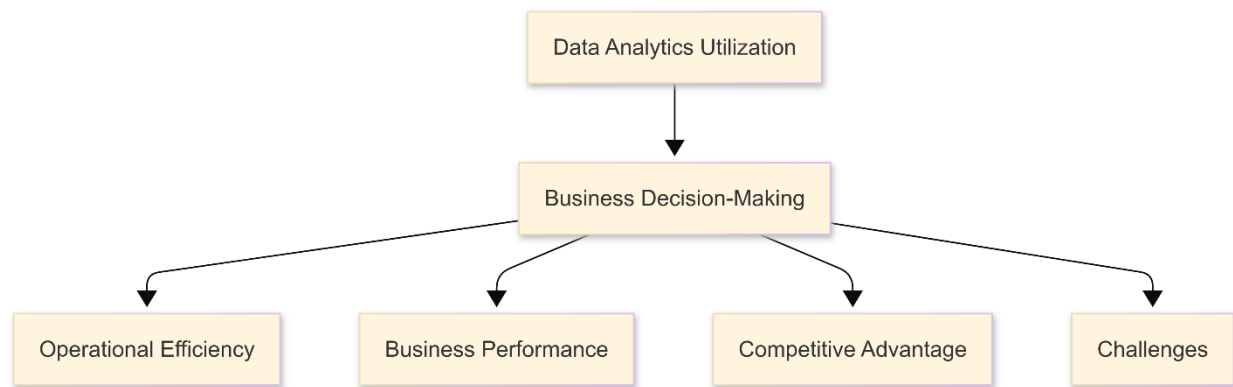


Figure 1. The research model diagram.

1.8. Research Methodology

For this study, a qualitative approach will be taken, with secondary data from NEOM's official reports being analyzed to understand how data analytics is utilized in business decision-making. Data will be collected from NEOM's official reports, which include strategic documents, business case studies, and performance metrics. These reports provide valuable insights into how data analytics is being integrated into various key sectors.

Moreover, a descriptive research design will be used, as it is ideal for documenting and explaining the current practices of data analytics in decision-making within NEOM. This design allows for a clear presentation of how data analytics is currently being applied and its effects.

The sample will consist of all publicly available reports from NEOM. These reports are rich in information about how data analytics is being used, and the most relevant documents will be selected for analysis.

In addition, a thematic analysis will be conducted to identify key patterns and themes related to the use of data analytics. The analysis will focus on how businesses in NEOM apply data analytics in decision-making, the types of data used, the challenges faced, and the impact on operational efficiency, business performance, and competitive advantage.

Since only publicly available data will be used, no ethical concerns regarding confidentiality will arise. Proper citation of all sources will be ensured, maintaining transparency. As no personal or sensitive data will be collected, the study will not face significant ethical challenges.

The main limitation is that the study will rely solely on publicly available reports, which may not fully capture all aspects of how data analytics is used in business decision-making in NEOM.

1.9. Scope of The Study

The research will look at businesses operating within NEOM, a smart city on Saudi Arabia's northwest coast. It will consider how data-driven decision-making has evolved over the past 3 to 5 years, tracking NEOM's growth and development since its launch in 2017.

The scope of this study focuses on understanding how businesses in NEOM are using data analytics to make decisions. Specifically, it will explore:

- The types of data collected and analyzed across different sectors in NEOM, such as renewable energy, healthcare, logistics, and tourism.
- The methods businesses in NEOM are using to carry out their data analytics.
- The challenges these businesses face when trying to implement and use data analytics for decision-making.
- The effects of data-driven decisions on business operations, particularly in terms of improving efficiency and gaining a competitive edge.

1.10. The Suggested Project Structure

The proposed structure for the research project is as follows (Midocean University, 2023):

1. Introduction: it provides an overview of the study including the background information, research problem, objectives, and the significance of the research.
 - 1.1. Background of the study: it illustrates the historical roots of the project idea.
 - 1.2. Research problem and objectives: it reflects the gap in the current literature or practice that the project seeks to investigate and address. Additionally, it identifies the specific goals and outcomes that the project aims to achieve.
 - 1.3. Research questions and hypotheses: it outlines the specific questions that the project aims to answer, as well as presents the specific hypotheses that will be tested in the project.

- 1.4. Scope of the study: it defines the scope of the project work.
- 1.5. Research significance: it clarifies the importance of the study at the theoretical level, and the empirical level.
- 1.6. Research methodology: it describes the methods and procedures used to conduct the research including information about the research design, data collection methods, sample selection, data analysis techniques, and any ethical considerations.
2. Literature review: it presents a critical analysis of existing research and literature relevant to the project. It will be divided into the following sections:
 - 2.1. Review of existing literature on data analytics in business decision-making
 - 2.2. The role of data analytics in smart cities
 - 2.3. Challenges and opportunities in applying data analytics in smart cities
3. Research methodology: it details the methods and procedures used to conduct the research including information about the research design, data collection methods, sample selection, and data analysis techniques.
 - 3.1. Research design and approach
 - 3.2. Data collection method
 - 3.3. Sampling technique
 - 3.4. Data analysis techniques
4. Analysis and results: it describes the statistical analysis for the research findings.
 - 4.1. Discussion of findings and insights from data collection
 - 4.2. Statistical analysis of operational efficiency and business performance
5. Discussion: it connects the project findings with literature.
 - 5.1. Interpretation of the results
 - 5.2. Implications for businesses in NEOM

6. Conclusion and recommendations.
 - 6.1. Summary of key findings
 - 6.2. Practical recommendations for businesses in NEOM
 - 6.3. Suggestions for future research
7. References: it provides comprehensive list of academic sources and references used throughout the study.
8. Appendices: it contains additional material and any other relevant documents, where applicable.

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