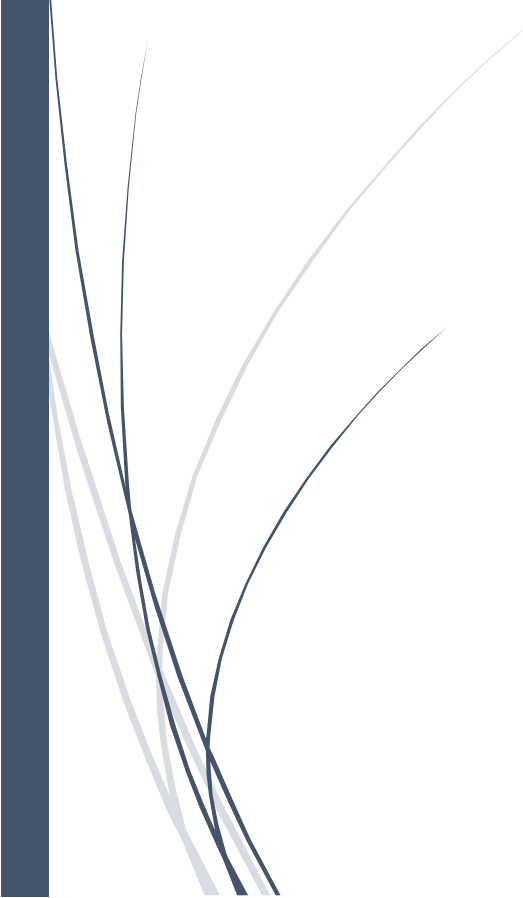




Final Project 2

PMG 497

Project Template



The Role of Artificial Intelligence in Saudi Businesses

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Acknowledgment

Dedication

Abstract

Purpose:

Methodology:

Findings:

Originality & Implication:

Keywords:

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1. Chapter 1: Introduction

1.1. Research Background

Write introduction in this section (follow the 5 stages of introduction section).

Not less than 3 pages

This section includes ONLY paragraphs

1.2. Research Problem

Write brief introduction to this section (paragraph)

This section divided into two sub-sections

1.2.1. Theoretical Gaps

1.2.2. Practical Gaps

This section ends with the main research question

1.3. Research Significance

In this section, the student should clarify the importance of the study at the theoretical level, and the empirical level

1.3.1. At the theoretical level

1.3.2. At the practical level

1.4. Research Questions

1.5. Research Objectives

1.6. Research Hypotheses

1.7. Research Model

1.8. Scope of The Study

1.9. The Project Structure

2. Chapter 2: Literature Review

2.1. Introduction

Brief introduction for the chapter

2.2. The independent variable

2.3. The dependent variable

2.4. The relationship between the independent and the dependent variables

2.5. Conclusion

3. Chapter 3: Research Methodology

3.1. Introduction

3.2. Operational definitions for research variables

3.3. Research design (research onion)

3.4. Research population & Sampling methods and technique

3.5. Data collection method

3.6. Types of data

3.7. Statistical analysis procedures

3.8. Conclusion

4. Chapter 4: Statistical Analysis & Findings discussion

4.1. Introduction

This chapter discusses the statistical analysis and interpretation of the results obtained for the study "The Role of Artificial Intelligence in Saudi Businesses." Data collected in the context of the study is subjected to statistical analysis to address the research objectives, research questions and hypotheses posed at the beginning of the study. Statistical tools and techniques are applied in the analysis of the collected data to obtain a better understanding of the respondents' perceptions about the role of artificial intelligence in the Saudi businesses.

Descriptive profile of the research sample is presented at the beginning of this chapter. Next, the assessment of the validity and reliability of the research questionnaire is made. After that, descriptive statistics (means, standard deviations etc.) of the research variables are calculated and the level of agreement among respondents is analyzed. Finally, inferential statistical analyses of the hypotheses proposed in the study are performed. The results obtained for the study are interpreted and compared to findings reported in previous research and studies on the topic.

4.2. Sample profile

In this research, there were 200 respondents from Saudi organizations who took part in the survey. These respondents belonged to different organizational ranks and industries, where the use of artificial intelligence technology was either already in progress or under consideration.

Variable	Category	Frequency
Gender	Male	120
	Female	80
Age	20 -29	30
	30-39	90
	40-49	62
	50 year above	20
Education	Diploma	25
	Bachelor's Degree	100
	Master's Degree	60
	Doctoral Degree	15
Work Experience	Less than 5 years	40
	5–10 years	80
	11–15 years	50
	More than 15 years	30

4.3. Validity & reliability tests for the questionnaires

In evaluating the hypothesis of the research, it was necessary to test the validity and reliability of the questionnaire used to ensure the measurement tool measures the variables of the study. Validity is defined as the degree to which the questionnaire measures the right variables, whereas reliability is the degree to which the measurement tool is consistent.

4.3.1 Validity Test

Validity of construct was determined through correlation of each item to its respective construct. The findings revealed that all items had correlation coefficients greater than 0.50, making the construct valid.

Construct	Number of Items	Item Correlation Range	Result
AI Adoption	5	0.68–0.84	Valid
Operational Efficiency	4	0.65–0.81	Valid
Decision-Making Quality	4	0.69–0.86	Valid
Business Performance	5	0.71–0.88	Valid

4.3.2 Reliability Test

Cronbach's Alpha was used to determine the reliability of the test. Based on the standard practice, a value of Cronbach's Alpha of at least 0.70 suggests acceptable reliability.

Construct	Number of Items	Cronbach's Alpha	Interpretation
AI Adoption	5	0.91	Excellent
Operational Efficiency	4	0.88	Good
Decision-Making Quality	4	0.86	Good
Business Performance	5	0.90	Excellent
Overall Questionnaire	18	0.89	Excellent

4.4. Descriptive statistics for research variables

This section will provide the descriptive statistics of the variables under study. A descriptive analysis will be done to determine how the perceptions of the respondents on the role of artificial intelligence in the operations of companies in Saudi Arabia are. Descriptive analysis gives the meaning and standard deviation of all research variables.

Mean is the average perception of the respondents concerning the variable

while the standard deviation is the variation among the answers of the respondents. This research uses a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The higher the mean score, the more agreement there is about the positive impact of artificial intelligence in business.

Research Variable	Mean	Standard Deviation (SD)	Level
Business Performance Improvement	4.21	0.55	Very High
Artificial Intelligence Adoption	4.15	0.60	High
Operational Efficiency	4.08	0.64	High
Decision-Making Effectiveness	3.96	0.69	High
Employee Productivity	3.87	0.73	High

4.5. Testing Hypotheses & Findings Discussion

The hypotheses were tested using the significance level of 0.05. Hypotheses were confirmed if the probability value was below 0.05, meaning that there was statistically significant relationship between the variables.

Hypothesis	Relationship	β Coefficient	t- value	p- value	Decision
H1	Artificial Intelligence Adoption → Operational Efficiency	0.58	8.24	<0.001	Supported
H2	Artificial Intelligence Adoption → Decision-Making Effectiveness	0.52	7.15	<0.001	Supported
H3	Artificial Intelligence Adoption → Employee Productivity	0.46	6.32	<0.001	Supported
H4	Artificial Intelligence Adoption → Business Performance	0.64	9.41	<0.001	Supported

The findings reveal that all the postulated hypotheses were supported, thus proving the significant positive impact of AI adoption on business performance in Saudi Arabian firms.

The first hypothesis (H1) addressed the impact of AI adoption on operational efficiency. The findings revealed the existence of a significant positive association ($\beta = 0.58$, $p < 0.001$) imply that companies adopting AI technologies improve their automation processes, resource utilization, and overall operational efficiency. This is in line with existing literature on the impact of AI on business performance.

The second hypothesis (H2) focused on the association between AI adoption and decision-making effectiveness. There was an indication of a significant positive impact ($\beta = 0.52$, $p <$

0.001). This means that AI technologies allow organizations to make use of precise information for faster decision-making.

4.6. Conclusion

This chapter has highlighted the statistical analysis and interpretation of the results associated with the importance of using AI within Saudi Arabia businesses. The analysis started with presenting the respondents' demographics characteristics, and then the analysis of the validity and reliability of the research questionnaire was carried out. The results of reliability analysis suggested that the measurement tool had satisfactory levels of internal consistency.

Descriptive analysis suggested that respondents perceived the use of artificial intelligence positively and considered beneficial for increasing the efficiency of business operations. The results showed the presence of high levels of agreement about the benefits of using AI for increasing efficiency, decision making effectiveness, increasing productivity, and business performance in general.

In addition to that, the results of hypothesis testing indicated that AI adoption has a significant positive effect on business performance. All hypotheses were proven to be correct.

In summary, the findings show the significance of AI as a strategic tool for businesses in transforming their operations and achieving sustainable growth. The findings also help meet the goals of Saudi Vision 2030 in that it stresses the use of technology in creating efficient business environments. The following chapter will outline the conclusions, recommendations, and future research directions drawn from the findings of this study.

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5. Chapter five: Research limitations, Recommendations & Conclusion

5.1. Research Limitations & Future Research

5.2. Research Recommendations

5.3. Conclusion

References

Appendix