

Impact of Artificial Intelligence on the Speed of Decision-Making Among Employees

An Applied Study on NEOM Company in Tabuk City

تأثير الذكاء الاصطناعي على سرعة اتخاذ القرار للموظفين
بالتطبيق على شركة نيوم في مدينة تبوك

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Abstract

Purpose: This study investigates the impact of Artificial Intelligence (AI) technologies on the speed of administrative decision-making among employees and decision-makers at NEOM Company in Tabuk City.

Methodology: A quantitative research design was adopted. Data were collected via an electronic questionnaire from a purposive sample of $N = 94$ employees and executives at NEOM. The study utilized descriptive statistics, Cronbach's Alpha for reliability testing, Pearson Correlation, and Simple Linear Regression analysis via SPSS to evaluate the relationship between the independent variable (AI Technologies) and the dependent variable (Speed of Decision-Making).

Findings: The empirical results revealed a strong, positive, and statistically significant correlation ($r = 0.734$, $p = 0.000$) between AI utilization and decision-making speed. Simple linear regression analysis indicated that AI technologies account for 53.9% of the variance in administrative decision-making speed ($R^2 = 0.539$, $F = 107.45$, $p = 0.000$). The analysis demonstrates that a one-unit increase in reliance on AI tools accelerates decision-making processes by 0.712 units ($\beta = 0.712$).

Conclusion: The study concludes that integrating AI technologies plays a pivotal role in streamlining operations, eliminating bureaucratic delays, and enhancing response efficiency without compromising decision quality. The study recommends investing in data infrastructure quality and continuous employee training to optimize the strategic benefits of AI-driven tools.

Keywords: Artificial Intelligence, Decision-Making Speed, Administrative Decisions, NEOM, Tabuk City.

Chapter Five: Research Limitations, Recommendations & Conclusion

1. Introduction

Following the statistical analysis and empirical findings presented in Chapter Four, this chapter outlines the final conclusions derived from the study. It addresses the practical and academic contributions by presenting the core conclusions, recognizing the research limitations, providing actionable recommendations for management, and suggesting future research pathways.

2. Research Conclusions

Based on the quantitative data analysis, the following conclusions have been established:

- **Causal Impact:** There is a direct, statistically significant positive impact of AI technologies on accelerating administrative and operational decisions at NEOM.
- **Variance Explanation:** AI implementations explain more than half (53.9%) of the changes and variance associated with response times and operational choices among personnel.
- **Operational Efficiency:** Automated algorithms and intelligent data systems dramatically reduce the time required to analyze complex data structures, allowing managers to transition from data synthesis to decision execution quickly.
- **Human-Machine Synergy:** While AI increases operational velocity, its ultimate efficiency remains heavily reliant on the human interface, data entry accuracy, and organizational readiness.

3. Research Limitations

To maintain academic transparency, the findings of this study should be interpreted within the context of the following limitations:

- **Spatial Limitation:** The study was exclusively applied to NEOM Company within Tabuk City, Saudi Arabia. Therefore, extending the generalizations to other geographical regions or different industrial sectors should be done with caution.
- **Temporal Limitation:** Data collection and analysis were conducted during the academic year 2026. Rapid advancements in AI software post-this period may introduce new dynamics not captured in this framework.
- **Sample Size Limitation:** The study relied on a sample size of $N = 94$ respondents. While statistically valid and sufficient for regression models, a larger sample size across diverse departments could yield deeper comparative insights.

4. Recommendations

In light of the empirical findings, the study offers the following strategic recommendations for NEOM's management and similar futuristic organizations:

- **Enhancing Data Infrastructure:** Management must continuously invest in refining data integration frameworks, ensuring high data quality and integrity, as machine learning efficiency is strictly contingent upon the quality of input parameters.
- **Continuous Professional Development:** Establishing continuous training programs and workshops for employees to adapt to modern AI tools, thereby bridging the technical gap and boosting organizational confidence in automated recommendations.
- **Mitigating Bureaucracy:** Redesigning traditional workflows to allow a more flexible delegation of authority, ensuring that the speed gained via real-time data flow is not delayed by traditional, multi-layered administrative approvals.

- **Balancing Speed and Quality:** Maintaining internal auditing protocols to ensure that high-velocity decision-making powered by AI does not overlook long-term strategic risks or ethical governance standards.

5. Future Research Directions

To expand the academic literature on this evolving phenomenon, future researchers are encouraged to:

- Conduct comparative studies examining the impact of AI on decision-making speed across different mega-projects in Saudi Arabia (e.g., Red Sea Global, Qiddiya).
- Explore the moderating effect of employee digital literacy on the relationship between AI systems and organizational performance.
- Utilize mixed-method approaches (combining quantitative surveys with qualitative managerial interviews) to capture nuanced operational challenges.