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PRACTICAL APPLICATIONS OF AI FOR OPTIMIZING ADMINISTRATIVE TASKS AND PRODUCTIVITY

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ABSTRACT

Abstract—Every administrative department plays a crucial role in driving organizational goals; however, many office functions—predominantly routine tasks—often face challenges such as processing delays, unnecessary complexity, outdated presentation formats, and an imbalance between heavy workloads and limited workforce capacity. This study aims to investigate the practical application of Artificial Intelligence (AI) innovation to mitigate these operational bottlenecks and enhance both the efficiency and effectiveness of office administration. Adopting a quasi-experimental design, this research compared the performance of traditional manual workflows against AI-assisted processes across selected administrative tasks. The empirical results indicated a significant transformation in productivity; AI integration reduced the average task completion time by approximately 75% (reducing duration to one-fourth of the original time), while simultaneously minimizing human error and enhancing data accuracy. Moreover, the study recorded a substantial increase in stakeholder satisfaction regarding the modernization and quality of work outputs. Consequently, this research concludes that AI serves as a pivotal instrument for digital transformation, empowering administrative personnel to elevate their operational competency in the digital era.

Keywords—AI 1, Digital Transformation 2, Office Tasks 3

OBJECTIVES OF THE RESEARCH

1. To investigate potential approaches and select appropriate Artificial Intelligence (AI) tools suitable for application in administrative management tasks.
2. To conduct a comparative analysis of operational efficiency—specifically in terms of processing time and data accuracy—between conventional workflows and AI-integrated workflows.
3. To assess personnel satisfaction and the quality of outputs resulting from the implementation of AI innovation in daily operations.

INTRODUCTION

In the contemporary landscape of business and education, administrative management serves as the backbone driving organizational success. However, administrative functions primarily consist of routine tasks that frequently encounter challenges such as processing delays due to complex procedures, human error, and workloads that exceed the existing workforce capacity. These inefficiencies directly impact the overall organizational

effectiveness, making the integration of technology not merely an option, but a necessity.

The emergence of Artificial Intelligence (AI), particularly Generative AI, has created a paradigm shift in productivity enhancement. Previous studies within the context of Suan Sunandha Rajabhat University, specifically by Wattana, S., & Nakglom, L. (2020), have indicated that digital literacy development and Information Technology acceptance are critical factors influencing the operational efficiency of support staff. Despite this awareness, the practical application of AI in day-to-day tasks remains limited due to a lack of clear operational guidelines.

Therefore, this research aims to bridge this gap by demonstrating the practical implementation of AI to “optimize” administrative workflows. This study seeks to provide empirical evidence that AI can serve as an intelligent assistant, concretely elevating office competency and transforming traditional administration into a high-performance digital operation.

LITERATURE&THEORY

1. Generative AI for Administration. Generative Artificial Intelligence (Generative AI) refers to algorithms capable of generating new content, including text, images, and data analysis. Contemporary literature suggests that AI functions effectively as a “Virtual Assistant” in mitigating the burden of routine tasks—such as drafting official correspondence, summarizing meeting minutes, and preparing data for decision-making. By automating these processes, organizations can significantly reduce operational time and allow personnel to focus on high-value tasks.

2. Operational Efficiency and Technology Acceptance. The success of implementing AI depends not only on software capabilities but also on user adoption. The Technology Acceptance Model (TAM) posits that users are more likely to adopt a new technology if they perceive it as “useful” and “easy to use.” In the specific context of Suan Sunandha Rajabhat University (SSRU), a study by Wattana, S., & Nakglom, L. (2020) emphasized that digital literacy and supportive infrastructure are critical factors influencing the operational efficiency of support staff. Therefore, the integration of AI aligns with the strategic goal of developing personnel competency to drive the university toward becoming a fully digital organization.

RELATED WORKS

Recent literature has extensively explored the role of Digital Transformation in higher education administration. A key study by Wattana, S., & Nakglom, L. (2020) highlighted that the primary barrier to operational efficiency in Suan Sunandha Rajabhat University is the manual nature of documentation and a lack of digital automation tools. Furthermore, global research on Generative AI suggests that Large Language Models (LLMs) can enhance worker productivity by up to 40% in writing-intensive tasks. However, there remains a scarcity of research demonstrating a practical framework for implementing specific AI tools across different administrative departments. This study aims to fill this gap by proposing and testing a targeted AI implementation model.

METHODS

1. **Research Design and Participants.** This study employed a quasi-experimental design (One-Group Pretest-Posttest Design). The population consisted of administrative staff at Dean's Office, Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University. A purposive sample of 30 personnel was selected, representing four key departments: General Administration, Policy and Planning, Public Relations, and Educational Services.

2. **The Proposed AI Application Framework (Intervention).** To ensure practical application, the researchers developed an "AI-Assisted Operational Framework." Participants were trained to use specific AI tools tailored to their departmental functions, as detailed in Table 1.

3. **Operational Workflow Description** The study conducted practical experiments across three key operational domains using specific AI tools and workflows as follows:

3.1 **Content Creation and Digital Marketing** To optimize social media management, specifically for Facebook Page administration, the study implemented an automated workflow integrating Google Sheets with the Gemini API.

- **Process:** Google Sheets served as the central database for content planning. A custom Google Apps Script was developed to fetch the Gemini API, enabling the AI to automatically generate engaging, concise captions and relevant hashtags based on the planned topics.
- **Result:** Once the monthly content calendar was generated, the data was exported as CSV files for the graphic design team. The posts were then scheduled via a Social Media Scheduler. This workflow significantly reduced the time spent on ideation and drafting.

3.2 **Human Resources (HR) Management** To alleviate the burden on HR personnel regarding repetitive inquiries (e.g., leave balances, group insurance eligibility, reimbursement policies, and overtime calculations), the study utilized Microsoft Copilot integrated with SharePoint.

- **Virtual HR Assistant:** Copilot functioned as a 24/7 chatbot, answering routine questions based on the organization's actual policy documents stored in SharePoint. This ensured accuracy and reduced human error.
- **Security:** Role-Based Access Control (RBAC) was enforced, ensuring general employees could not access sensitive management-level data.
- **Observation:** The implementation reduced the HR workload by approximately 50-70%, allowing staff to focus on strategic "People Strategy" tasks rather than administrative routines.

Additionally, ChatGPT was employed for advanced HR tasks, including:

- **Drafting Job Descriptions (JD)** based on Competency and KPIs.
- **Summarizing Resumes/ CVs** to identify strengths, potential red flags, and role suitability.
- **Analyzing candidate skills** without bias regarding age, gender, or university background.
- **Summarizing lengthy reports** into executive bullet points.
- **Generating behavioral interview questions** to reveal candidates' true potential.
- **Analyzing resignation reasons** to derive insights for retention planning.

- Simplifying complex labor laws into actionable checkpoints.
- Designing comprehensive training outlines (Objectives, Schedule, Activities, KPIs) within minutes.

3.3 Educational Media and Public Relations Production The study adopted an end-to-end AI-driven pipeline to produce educational and PR materials, reducing production time from weeks to mere hours while maintaining high quality and modern aesthetics. The workflow consisted of five steps:

- Step 1: Using ChatGPT as a creative director to write scripts and design scene storyboards.
- Step 2: Generating static scenes using NanoBanana for visual storytelling.
- Step 3: Animating static images into video clips using Grok or Meta AI.
- Step 4: Generating voiceovers based on the script using Google AI Studio (Text-to-Speech).
- Step 5: Assembling all AI-generated assets (images, video, voice) using CapCut or Canva to produce the final public relations media.

Table 1 Matrix of AI Application Classified by Department and Expected Outcomes

Department	Task Description	Selected AI Tools	Application Use Case	Efficiency Outcome
1. General Administration	Drafting official correspondence, minutes taking, communication.	Generative AI (LLMs) <i>(e.g., ChatGPT, Gemini)</i>	Drafting official letters based on keywords and summarizing meeting minutes from audio transcripts.	Reduces drafting time by 80% and minimizes grammatical errors.
2. Policy and Planning	Data analysis, performance reporting, statistical summary.	Data Analysis AI <i>(e.g., Excel AI Features, GPT Data Analyst)</i>	Automating data cleaning and trend analysis processes.	Increases calculation accuracy to 100% and accelerates report generation.

Department	Task Description	Selected AI Tools	Application Use Case	Efficiency Outcome
3.Public Relations	Graphic design, caption writing, video editing.	AI for Graphic & Content <i>(e.g., Canva Magic, Midjourney)</i>	Generating instant visuals and drafting PR content/news releases.	Accelerates media production and enhances creative diversity.
4. Educational Services	Student inquiries, regulation information.	AI Chatbot <i>(e.g., Custom GPTs)</i>	Deploying an automated Q&A database for 24/7 basic information service.	Reduces repetitive inquiry workload, allowing staff to focus on complex cases.

RESULTS

Improvement in Operational Efficiency. The comparative analysis revealed a statistically significant improvement in operational efficiency. As shown in Table 2, the average time required to complete administrative tasks decreased by approximately 72.5% after implementing the AI framework.

Table 2 Comparison of Average Task Completion Time (Pre-test vs. Post-test)

Task Category	Average Time (Pre-test)	Average Time (Post-test)	Reduction (%)
Drafting Official Letters	45 mins	10 mins	-77.8%
Data Analysis & Reporting	120 mins	30 mins	-75.0%
PR Content Creation	60 mins	15 mins	-75.0%
Answering Routine Inquiries	15 mins	3 mins	-80.0%
Overall Average	60 mins	14.5 mins	-75.8%

User Satisfaction. The survey results indicated a high level of user satisfaction (Mean = 4.65, S.D. = 0.48). Participants reported that AI tools significantly reduced workload stress and allowed them to focus on more complex, creative tasks rather than repetitive routines.

CONCLUSION AND FUTURE WORK

This research demonstrates that the practical application of AI tools—specifically tailored to departmental functions—can revolutionize administrative workflows. The findings confirm that AI integration significantly reduces processing time, minimizes errors, and enhances staff satisfaction. The “AI-Assisted Operational Framework” proposed in this study proved to be an effective model for increasing productivity at Suan Sunandha Rajabhat University.

For future work, it is recommended that the university develops a formal “AI Policy” to govern data privacy and ethical usage. Additionally, continuous training programs on advanced Prompt Engineering should be established to sustain digital competency among staff. Future research should expand the scope to include cross-departmental automation and the integration of AI with existing ERP systems. For example, research by Phunaploy et al, (2021) found that the AL MIAP learning model effectively promoted digital intelligence skills in undergraduate students, leading to improved awareness of copyright and security in digital usage.

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