



# THE POWER OF PROGRESS

## MEASURING EFFICIENCY GAINS IN WORKPLACE AUTOMATION



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### ABSTRACT

This original research study examined the efficiency gains and employee perceptions of workflow automation within a municipal government IT environment using a mixed-method approach. Through a case study of an automated Police Department Travel and Training Request system and employee survey data, results showed that automation reduced manual processes, improved task speed, and enhanced workflow organization, while perceptions of usability and trust were generally positive. Overall, the findings suggest that automation is highly effective in public-sector workplaces; however, continued focus on user trust and system understanding remains important.

### INTRODUCTION

As governments adopt digital infrastructure, many public organizations are using low-code platforms like Microsoft Power Platform to improve efficiency and streamline operations. Tools such as Power Apps, Power Automate, and Power BI allow employees to automate repetitive tasks, reduce manual work, and improve communication across departments [1]. These technologies are especially useful in municipal governments, where workflows often involve complex approvals and data transfers [2].



For example, the City of Sugar Land implemented an automated service request system for pilots at its regional airport, saving over 700 hours of staff time [3]. Within the city's IT Business Systems Department, Power Automate provides an opportunity to examine how automation impacts both workflow efficiency and employee experience. While automation can reduce task time and manual effort, employee perceptions vary, with some finding systems intuitive and others viewing them as disruptive.

Although automation has been widely studied in private-sector organizations, research in public-sector environments remains limited [4]. Because government operations differ in structure and priorities, it is important to understand how automation affects both efficiency and employee trust. Therefore, this study aims to evaluate how workflow automation using Microsoft Power Automate impacts efficiency and employee perceptions of usability, effectiveness, and trust within the City of Sugar Land's IT department.

### METHODOLOGY

This study includes a case study analysis of an existing automation project within the City of Sugar Land's IT Business Systems Department. The Police Department Travel and Training Request System was examined to evaluate workflow efficiency before and after automation. Originally dependent on paper forms and manual processes, the system was redesigned using Microsoft Power Apps, Microsoft Power Automate, and Microsoft Power BI to streamline request submission, automate approvals, standardize calculations, and improve data tracking and reporting.

A voluntary employee survey was also conducted over 10 days to gather both quantitative and qualitative data on user experience and perceptions of automation. Participants were informed of the survey's purpose and confidentiality, and responses focused on usability, efficiency, trust, and overall satisfaction with automated workflows. The survey data was used alongside the case study findings to identify patterns in performance improvements and employee adoption of automation systems.

### RESULTS

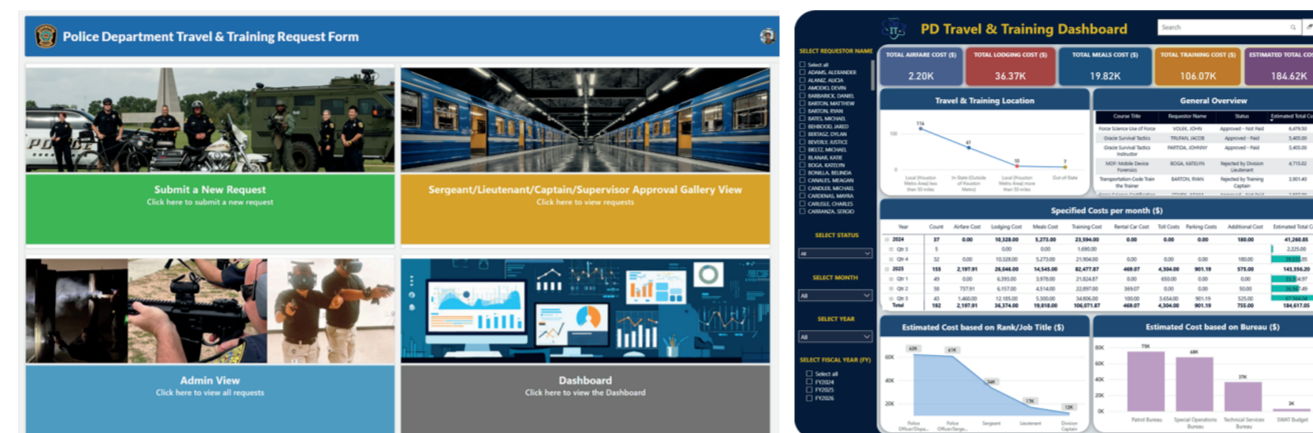


Figure 1

Figure 2

Automation tools have reduced the time required to complete certain tasks in my work.

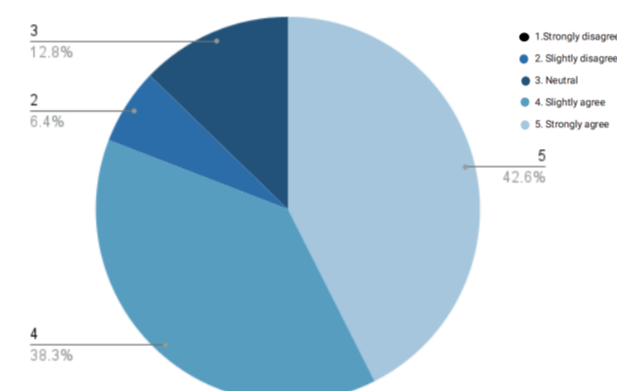


Figure 3

Automation has reduced repetitive manual steps in my work processes.

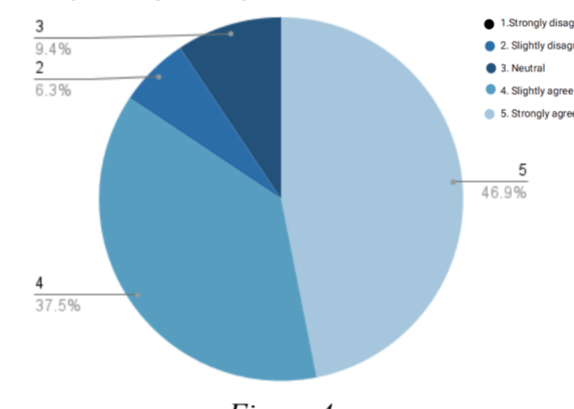


Figure 4

The automated systems I use are easy to understand and navigate.

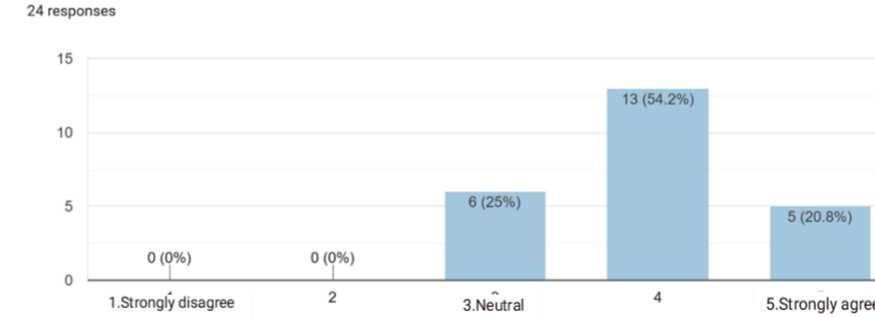


Figure 5

I trust automated systems to process requests or information accurately.

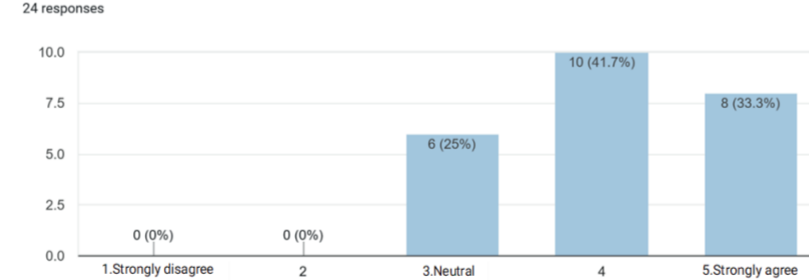


Figure 6

Overall, automation has improved efficiency within my department.

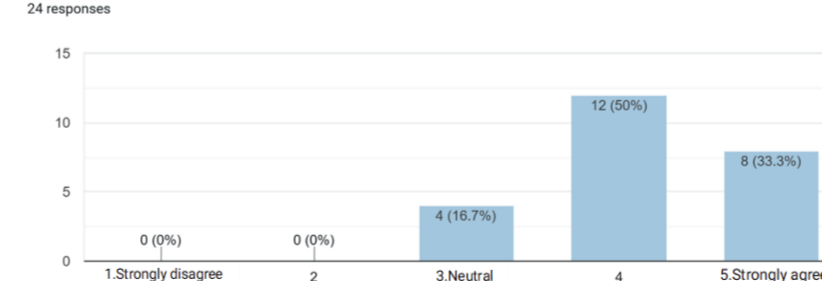


Figure 7

### FINDINGS

Upon reviewing the survey data, employees interacted with automation in different capacities, yet their experiences with workflow efficiency, usability, and trust followed consistent patterns. Most respondents reported frequent interaction with automated systems, showing that these tools are integrated into daily operations. Efficiency-related responses showed strong agreement that automation reduced task completion time and minimized repetitive manual steps (Figures 3 and 4). This aligns with the case study, where automating the Police Department Travel and Training Request workflow eliminated manual routing, calculations, and status tracking, suggesting that automation improves efficiency while simplifying complex processes.

Another key pattern appears in usability and trust. While many participants agreed that systems were easy to understand, responses ranged from neutral to strongly agree rather than being concentrated at the highest level (Figure 5). Trust ratings showed a similar distribution (Figure 6), indicating that although employees frequently use automation, confidence in these systems is not consistently strong. This reflects the "AI Trust Gap," where employees recognize benefits but still show hesitation in fully relying on automated systems. Despite this, most respondents agreed that automation improved productivity and had a positive impact on the department overall (Figure 7).

These findings are supported by the case study, where the automated workflow improved transparency, centralized data, and enabled real-time tracking through Power BI dashboards (Figures 1 and 2). Measurable improvements, such as faster approvals and reduced manual workload, align with employee perceptions. Overall, the results support the hypothesis that workflow automation improves efficiency and productivity, while showing that trust remains an important factor for adoption in a public-sector environment.

### DISCUSSION

When this research began, it was expected that employees would show high trust in automated systems; however, the results revealed a more complex balance between efficiency, usability, and trust. While most participants agreed that automation improved productivity and reduced manual work, responses for usability and trust were more varied. This suggests that even with frequent use, employees do not fully rely on automated systems, highlighting that familiarity alone does not eliminate hesitation and that understanding and system transparency play a role in building that trust. At the same time, the case study confirmed clear efficiency gains, including reduced manual steps, faster approvals, and centralized tracking.

Although the survey captured a range of employee experiences, there were limitations. Responses were self-reported and may reflect personal bias, and the sample was limited to users of a single workflow, which may not be representative of all departments or systems. External factors such as technical experience and job role were also not accounted for.

Future research could expand data collection across multiple workflows and departments to include more detailed performance metrics and further explore factors influencing trust. All in all, even though automation greatly improves efficiency and productivity, strengthening user understanding and transparency will be key to increasing trust and maximizing automation adoption in public-sector environments.

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