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# Exploring Generative Artificial Intelligence Usage in the DPWH: Platforms, Extent of Adoption, and Areas of Application

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## ABSTRACT

Artificial intelligence (AI) transforms how we work, think, and lead. In the Philippines, almost half of the population uses generative artificial intelligence (GenAI) tools at least once a month for work and personal purposes. Despite growing adoption of GenAI, there isn't much information about how it is used in government offices, which still rely heavily on traditional, paper-based methods. This study examined how much GenAI is being used by the Department of Public Works and Highways (DPWH) employees, focusing on areas of application, perceived impacts, and barriers to integration. Data were collected from 50 respondents using Google Forms through a non-probability convenience sampling. Generalist tools like ChatGPT were widely adopted across functions, while specialized tools like Canva, Grammarly, and Quillbot were only used by a few. On the other hand, tools like Firefly, Midjourney, Claude, and Perplexity remained underutilized. Statistical analysis confirmed task-specific patterns of GenAI use, where the chi-square test showed a significant association between task type and tool usage, $\chi^2(48, N = 232) = 91.17$, $p < .001$. The overall index ($\mu = 2.07$, $SD = 0.78$) reflects a low-to-moderate level of adoption, implying that while GenAI is already introduced in the workplace, its use continues to emerge and has not yet reached full integration into daily operations. Current applications were concentrated in correspondence, documentation, and research. The study recommends policy development, training, and ethical guidelines tailored to government operations to enable strategic and sustainable integration.

***Keywords***: *: Artificial Intelligence, Generative Artificial Intelligence, government integration, Department of Public Works and Highways*

## INTRODUCTION

Rapid technological advances have transformed numerous tasks and processes that were traditionally manual, surpassing what could be accomplished through human effort alone since the onset of the Industrial Revolution. Breakthroughs such as textile mechanization (Mokyr, 1990), electric lighting (Hughes, 1983), personal computers (Campbell-Kelly, 2004), and the internet (Abbate, 1999) have redefined the nature of work. Today, artificial intelligence (AI) continues this transformative trajectory (Russell & Norvig, 2020). As of the late 20th century, AI is defined as the study of how to make computers do things that would typically require human intelligence, as this was done through programmed algorithms and computational logic instead of biological neural processes (Rich, 1985). AI refers to the computer systems that mimic human cognitive processes by interpreting visual data, recognizing speech, making decisions, translating languages, and solving problems through artificial rather than biological means.

In the Philippines, almost half of the population (46%) uses generative AI (GenAI) tools at least once a month for work and personal purposes, which is more than the global average of 39% and the Southeast Asian average of 44% (JobStreet, as cited in Philstar Life, 2024). Filipinos mainly use GenAI for writing, paperwork, and learning and doing research. Despite this widespread adoption,

there is limited information regarding the application of AI within government offices, which still relies heavily on traditional paper-based processes. Understanding how AI is utilized in Filipino work settings, such as in the Department of Public Works and Highways (DPWH), is essential to identify current practices, potential benefits, and areas for improvement.

This study is focused on determining the extent of GenAI utilization among DPWH employees and the specific contexts of its application. The research also looks at the demographics of the employees, commonly used platforms, integration into daily work functions, and specific application areas. Additionally, it looks into whether people use GenAI mostly to be more productive or if it reflects institutionalized practices within DPWH. By exploring these dimensions, the research provides an analysis of the influence of AI tools on work processes within a Philippine government agency.

The findings of this research are expected to inform policymakers regarding the development of ethical AI adoption; guide DPWH's Human Resource and Administrative Services (HRAS) in training and digital transformation initiatives; and benefit stakeholders, which include engineers, consultants, contractors, and the public, through more efficient, effective, and transparent processes. The research is scoped only to GenAI platforms and their work-related applications, assuming respondents provide honest and accurate information, represent current trends, and have basic awareness of GenAI tools. This research aims to illuminate the current GenAI utilization in the Philippine government agency, providing a foundation for future research and policy development.

## MATERIALS AND METHODS

This research utilized a descriptive quantitative research design to investigate the extent of GenAI adoption among employees of the DPWH. The sampling design achieved was non-probability convenience sampling, with a combination of voluntary response and incidental snowballing. Fifty participants were surveyed through a Google Forms, disseminated using a hybrid sampling technique that combined simple random sampling and convenience sampling, due to respondents' time, access, and availability constraints. The responses were analyzed using descriptive and inferential statistics to provide insights into the employee demographics, extent of adoption, and the factors influencing the use of GenAI within DPWH.

## RESULTS AND DISCUSSION

### Respondents Demographic Profile

Table 1 shows the frequency and percentage distribution in terms of age. As shown in, most respondents were between 21 and 28 years old (n = 24, 48.00%), followed by those aged 29 to 36 (n = 17, 34.00%). Only a few respondents were in the 37 to 44 (n = 3, 12.00%) and 53 to 60 (n = 3, 6.00%). No participants were in the 45 to 52 or 61 to 70 age brackets. This means that most respondents were young employees, mostly in their twenties. This finding reflects the current situation in the Philippine workforce, where the workforce is generally young, according to the Inquirer (2025) report. Understanding this age dynamic is important for the study, since age is often related to digital exposure and comfort with technology.

Table 2 reveals that more than half of the respondents were in technical entry-level positions (n = 23, 46.00%). This was followed by technical mid-level staff (n = 14, 28.00%) and administrative first-level staff (n = 8, 16.00%). Only a small number were division, section, or unit heads (n = 2, 4.00%), project managers or district leaders (n = 2, 4.00%), and administrative second-level employees. The technical employees (engineers or architects) are usually involved in planning and design, construction estimates, scheduling, procurement support, contract management, project monitoring, preparing daily

reports, and writing correspondence. Administrative employees mainly manage office operations, human resources, and administrative development, including preparing workplace reports for quality standards. The heads, who are middle managers, usually supervise the work of technical or administrative staff and report to managers at a higher level. On the other hand, project managers or district leaders provide overall supervision of infrastructure projects being implemented. This distribution shows that most respondents came from operational and support positions, which are areas where digital tools and, eventually, GenAI can be integrated into their tasks.

**Table 1**
**The Frequency and Percentage Distribution by Age**

| Profile | Characteristics | Frequency | Percentage |
|---|---|---|---|
| Age | 21–28 | 24 | 48.00 |
| | 29–36 | 17 | 34.00 |
| | 37–44 | 6 | 12.00 |
| | 45–52 | 0 | 0.00 |
| | 53–60 | 3 | 6.00 |
| | 61–70 | 0 | 0.00 |
| | Total | 50 | 100.00 |

**Table 2**
**The Frequency and Percentage Distribution by Current Position**

| Profile | Characteristics | Frequency | Percentage |
|---|---|---|---|
| Position | Administrative – 1st Level[a] | 8 | 16.00 |
| | Administrative – 2nd Level[b] | 1 | 2.00 |
| | Technical – Entry Level[c] | 23 | 46.00 |
| | Technical – Mid Level[d] | 14 | 28.00 |
| | Division/ Section/ Unit Heads[e] | 2 | 4.00 |
| | Project Managers/ District Leaders[f] | 2 | 4.00 |
| | Total | 50 | 100.00 |

Note: *[a-f] are based on typical plantilla items offered in the DPWH*
*[a] Administrative Aides, Administrative Assistant, or equivalent*
*[b] Administrative Officers, or equivalent*
*[c] Engineering Assistants, Engineer I, Engineer II*
*[d] Engineer III, Engineer IV*
*[e] Heads (Division, Section, or Unit); Administrative Officers (Supervising or Chief); Engineer V; Project Engineer*
*[f] Project Managers, District Engineers, Assistant District Engineers*

Table 3 shows that most respondents had been in service for 1 to 10 years (n = 36, 72.00%), followed by those with less than 1 year of service (n = 8, 16.00%). Only three respondents had 11 to 20 years (n = 3, 6.00%) and 31 to 45 years (n = 3, 6.00%), while no respondents had 21 to 30 years of service. This absence may be partly explained by implementing the Rationalization Plan under Executive Order 366 (2004), which imposed restrictions on hiring for nearly a decade and created a gap in recruitment (Department of Budget and Management, 2013). Consistent with the earlier findings on age and

position, most respondents were young and in entry-level roles, indicating that participants are generally early in their careers—an aspect that may influence their level of digital literacy and openness to adopting GenAI tools.

**Table 3**
**The Frequency and Percentage Distribution by Length of Service**

| Profile | Characteristics | Frequency | Percentage |
|---|---|---|---|
| Length of Service | < 1 year | 8 | 16.00 |
| | 1–10 years | 36 | 72.00 |
| | 11–20 years | 3 | 6.00 |
| | 21–30 years | 0 | 0.00 |
| | 31–45 years | 3 | 6.00 |
| | Total | 50 | 100.00 |

Table 4 shows that more than half of the respondents reported having an intermediate level of digital literacy (n = 31, 62.00%), meaning they are comfortable using office software and online tools. This was followed by those considered advanced (n = 14, 28.00%), who can troubleshoot and use specialized digital tools, and expert users (n = 5, 10.00%), who are highly proficient and familiar with emerging technologies such as AI tools. None of the respondents classified themselves as beginners or those limited to basic computer use. This distribution reflects that the workforce in general is digitally proficient and tech-savvy. Further, the preliminary results are supported as technical staff and administrative second-level employees must also take a computer proficiency exam within the first few months of work. Considering the relatively young profile of the workforce, these results suggest that their digital literacy provides a strong foundation for adopting GenAI in DPWH operations.

**Table 4**
**The Frequency and Percentage Distribution by Level of Digital Literacy**

| Profile | Characteristics | Frequency | Percentage |
|---|---|---|---|
| Length of Digital Literacy | Beginner | 0 | 0.00 |
| | Intermediate | 31 | 62.00 |
| | Advanced | 14 | 28.00 |
| | Expert | 5 | 10.00 |
| | Total | 50 | 100.00 |

**Awareness, Access, and Platforms Used**

All 50 respondents (100%) know GenAI tools, indicating full awareness of these technologies among the surveyed employees. Given this complete awareness, the subsequent analysis shown in Table 5 focuses on how respondents discovered these tools and the devices they used. Respondents primarily discovered GenAI through social media and online platforms (n = 33, 66.00%), followed by colleagues, family, and friends (n = 15, 30.00%). Meanwhile, only a small proportion cited official DPWH memoranda (n = 1, 2.00%) or other sources (n = 1, 2.00%), while none reported gaining awareness through DPWH-conducted training and seminars (n = 0, 0.00%). These findings indicate

that awareness of GenAI is primarily shaped by informal and online channels rather than the department's mechanisms.

**Table 5**
**Sources of Awareness about Generative AI Tools**

| Profile | Response | Frequency | Percentage |
|---|---|---|---|
| Means of Discovery | Colleagues, Family, and Friends | 15 | 30.00 |
| | Social media/ Online Platforms | 33 | 66.00 |
| | DPWH Office or Department Order/ Memorandum | 1 | 2.00 |
| | DPWH Trainings and Seminars | 0 | 0.00 |
| | Other (please specify) | 1 | 2.00 |
| | Total | 50 | 100.00 |

As shown in Table 6 below, about device access, half of the respondents (n = 25, 50.00%) used personal devices exclusively. Most used a combination of their workplace and personal devices from time to time (n = 17, 34.00%). A tinier fraction relied solely on workplace devices (n = 3, 6.00%), while still respondents indicated no access (n = 5, 10.00%). This pattern suggests that the use of GenAI is primarily self-driven, with employees depending on their own devices rather than departmental provisions.

**Table 6**
**Access to Generative AI Tools for Work-Related Tasks**

| Profile | Devices Used | Frequency | Percentage |
|---|---|---|---|
| Devices Used | Workplace devices only | 3 | 6.00 |
| | Personal devices only | 25 | 50.00 |
| | Both devices | 17 | 34.00 |
| | No access | 5 | 10.00 |
| | Total | 50 | 100.00 |

Figure 1 illustrates that ChatGPT (OpenAI) is the most familiar and widely used tool, with almost all respondents who indicated familiarity also reporting actual use. It is followed by Canva (Magic Studio/AI design tools) and Grammarly/Quillbot, showing relatively high levels of awareness and usage. However, a slight gap exists where some respondents are familiar with it but do not actively use it. People know about tools like Google Gemini and Microsoft Copilot, but not as many people use them in their work. However, Anthropic Claude, Adobe Firefly, and Midjourney/Stable Diffusion are still niche platforms that few people know about or use. This distribution reveals that respondents primarily rely on mainstream, user-friendly, and text-focused tools (ChatGPT, Canva, Grammarly/Quillbot). At the same time, image-generation and advanced AI platforms have not yet been widely adopted in the workplace.

Table 8 displays the conversion rate, as a percentage of people familiar with the tool. For example, ChatGPT had the highest conversion rate (100.00%), which means that once employees knew about these tools, they frequently utilized them. Despite a small number of respondents familiar with Microsoft Copilot, it displayed the highest conversion rate (100.00%) as the DPWH uses and endorses

Microsoft applications only in their provided and configured work laptops and computers. Further, Grammarly/Quillbot (88.89%) and Canva (82.76%) also registered strong conversions. On the other hand, Anthropic Claude (50.00%) and Adobe Firefly (33.33%) had lower conversion rates, meaning that being familiar with a platform doesn't always mean people will actually use it. People didn't use MidJourney and Perplexity AI very much because they didn't know about them. While the survey forms allowed respondents to specify other GenAI tools, none were reported.

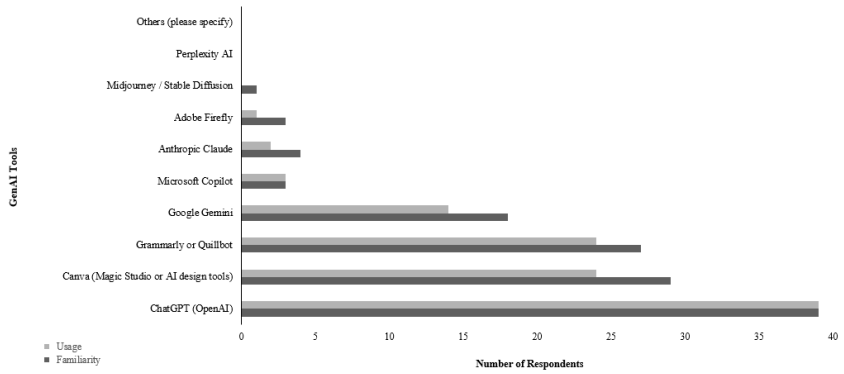


**Figure 1. Familiarity and Usage of Respondents in Generative AI Tools**

**Table 8**
**Conversion Rates of Generative AI Tools among DPWH Employees**

| GenAI Tools | Familiarity | Usage | Conversion Rate |
|---|---|---|---|
| ChatGPT (OpenAI) | 48 | 48 | 100.00 |
| Canva (Magic Studio or AI design tools) | 34 | 29 | 82.76 |
| Grammarly or Quillbot | 30 | 27 | 88.89 |
| Google Gemini | 22 | 18 | 77.78 |
| Microsoft Copilot | 6 | 6 | 100.00 |
| Anthropic Claude | 4 | 2 | 50.00 |
| Adobe Firefly | 3 | 1 | 33.33 |
| Midjourney / Stable Diffusion | 1 | 0 | 0.00 |
| Perplexity AI | 1 | 1 | 0 |
| Others (please specify) | 0 | 0 | 0 |

Note: *Conversion rates, in percentage, represent the proportion of respondents who actively use a tool among those who indicated familiarity with it.*

## Usage Patterns and Extent of Use

Table 9 shows the adoption and integration index across five indicators. The overall index ($\mu = 2.07$, $SD = 0.78$) reflects a low-to-moderate level of adoption, implying that while GenAI is already introduced in the workplace, its use continues to emerge and has not yet reached full integration into daily operations. Further, Cronbach's alpha analysis was conducted to ensure the reliability of this adoption scale. The five indicators demonstrated acceptable internal consistency, $\alpha = 0.789$, supporting their use as a composite measure of the overall adoption index. Among the five specific indicators, usage frequency received the highest rating ($\mu = 2.82$), revealing that employees typically engage with GenAI every week. However, the usage duration was very low ($\mu = 1.40$), indicating that such usage tends to be quick and superficial, lasting less than 10 minutes per session. This contrast shows that although GenAI is accessed regularly, it is not yet maximized for longer or more complex tasks. While

the volume of work done (μ = 2.20) and extent of integration (μ = 2.16) further highlighted the limited application of GenAI, since employees mostly use it for only 1–2 tasks and to a small extent in workflows. Similarly, dependence on GenAI (μ = 1.76) was low, showing that employees are slightly dependent but not that reliant on these tools in their work.

**Table 9**
**Indicators of Adoption and Integration of Generative AI**

| Indicator | Mean | Var | SD | Description | Interpretation |
|---|---|---|---|---|---|
| Usage Frequency[a] | 2.816 | 1.051 | 1.0253 | Weekly Use | Moderate |
| Usage Duration[b] | 1.400 | 0.367 | 0.606 | < 10 mins | Low-Moderate |
| Volume of Work Done[c] | 2.200 | 0.653 | 0.808 | 1-2 tasks | Low-Moderate |
| Extent of Integration[d] | 2.160 | 0.545 | 0.738 | To a small extent | Low-Moderate |
| Dependence on GenAI[e] | 1.760 | 0.349 | 0.591 | Slightly Dependent | Low |
| Overall Adoption Index | 2.067 | 0.593 | 0.754 | - | Low-Moderate |

Note: *Scale values were based on survey response options for each indicator.*
[a] Usage frequency: Daily = 3.20–4.00, Weekly = 2.40–3.19, Monthly = 1.60–2.39, Rarely = 0.80–1.59, Never = 0.00–0.79.
[b] Usage duration: < 10 minutes = 0.00–1.00, 10–30 minutes = 1.10–2.00, 31–60 minutes = 2.10–3.00, > 1 hour = 3.10–4.00.
[c] Volume of work done: None = 0.00–1.00, 1–2 tasks = 1.10–2.00, 3–5 tasks = 2.10–3.00, More than 5 tasks = 3.10–4.00.
[d] Extent of integration: Not at all = 0.00–1.00, Small extent = 1.10–2.00, Moderate extent = 2.10–3.00, Great extent = 3.10–4.00.
[e] Dependence on GenAI: Not dependent at all = 0.00–1.00, Slightly dependent = 1.10–2.00, Moderately dependent = 2.10–3.00, Highly dependent = 3.10–4.00.

## Applications and Perceived Impact

Figure 2 reports the diverse applications of GenAI across different work tasks. The most frequently cited tasks were correspondence, documentation, and report writing (n = 38), which shows how useful generative models and grammar/paraphrasing tools are for making professional written communication. Then comes research and gathering information (n = 29). This indicates that respondents utilize large language models for exploratory data gathering, while employing Gemini for fact-finding purposes. There were also creative and design-related tasks (n = 22), administrative tasks like sending and receiving emails, setting up meetings, and entering data (n = 15), process automation (n = 8), training and learning support (n = 7), and technical tasks like engineering design, construction scheduling, project planning, and cost estimation (n = 5). These lower frequencies indicate that the adoption of AI in procedural or specialized technical tasks is still in its early stages.

A chi-square test of independence was performed to check if tool usage exhibited significant variation across different task types. The results showed a statistically significant relationship, $\chi^2(48, N = 232) = 117.73$, $p < .001$. This means that the people who answered did not choose GenAI tools randomly; instead, they decided on the most helpful tool for their work. Correspondence, documentation, and report writing emerged as the most common applications, dominated by ChatGPT and Grammarly/Quillbot, while research and information gathering followed, with ChatGPT, Gemini, and Grammarly as the leading tools. Canva was mostly used for creative and design-related tasks, which align with its specific features. On the other hand, administrative, technical, training, and automation tasks were less popular overall, but ChatGPT was always present in all categories. The results show that people use GenAI tools in ways that are very similar to how they were meant to be used. Canva is mostly used for design, Grammarly and Quillbot are primarily used for writing, and ChatGPT can be used for a wide range of tasks. On the other hand, tools like Firefly, Midjourney, Claude, and Perplexity are still not being used enough, which could mean that they are only helpful for a small group of people or that not many people are using them. The disparity between generalist and specialist tools shows

how GenAI is being adopted. Instead of using them interchangeably, professionals choose platforms based on the needs of the task.

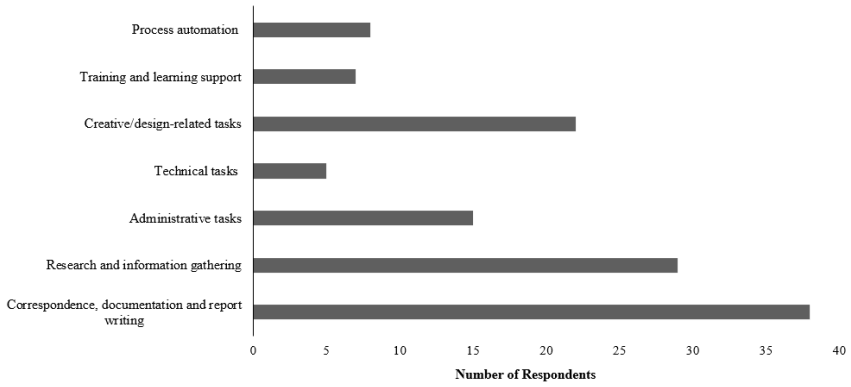


**Figure 2. Areas of Work Where GenAI Has Been Applied**

**Table 10**
**Cross-tabulation of reported GenAI tool usage across work areas**

| Task / Tool | ChatGPT | Google Gemini | Microsoft Copilot | Grammarly/ Quillbot | Canva (AI) | Adobe Firefly | Midjourney/ Stable Diffusion | Anthropic Claude | Perplexity AI |
|---|---|---|---|---|---|---|---|---|---|
| Correspondence, documentation & report writing | 36 | 7 | 4 | 25 | 3 | 0 | 0 | 1 | 0 |
| Research & information gathering | 28 | 12 | 3 | 10 | 3 | 1 | 1 | 2 | 1 |
| Administrative tasks | 12 | 3 | 1 | 7 | 0 | 0 | 0 | 1 | 0 |
| Technical tasks | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 0 |
| Creative/ design-related tasks | 3 | 6 | 2 | 0 | 18 | 2 | 1 | 1 | 0 |
| Training & learning support | 5 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| Process automation | 5 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |

Note: *Values represent frequency counts of tool usage across work areas, as reported by respondents. Because multiple selections were permitted for both task categories and GenAI tools, the cell entries and totals reflect instances of use rather than unique respondents. Consequently, column totals in Table 10 do not correspond to the number of users shown in Figure 1 and Table 8, which presents respondent-level usage. "Not applicable" cells (i.e., no reported usage) are recorded as zero.*

Table 11 shows that the majority of respondents reported using GenAI primarily for personal efficiency and convenience (n = 37, 74.00%), with smaller proportions indicating use for collaborative or team purposes (n = 9, 18.00%), and minimal adoption as part of institutionalized processes (n = 2, 4.00%) or for others who never used GenAI yet for work purposes (n = 2, 4.00%). These results suggest that current applications are still mostly individual and task-based, which is a sign that GenAI tools are still in the early stages of integration and are being used to make personal workflows easier instead of being built into formal organizational systems. Results were comparable to a study on perceptions of

adoption of AI, where the emerging themes were perceived usefulness, perceived ease of use, social influence, and facilitating conditions (Kessler & Martin, 2017).

**Table 11**
**Primary Purpose of GenAI Use in DPWH**

| Purpose | Frequency | Percentage |
|---|---|---|
| For personal efficiency and convenience | 37 | 74.00 |
| For collaborative work or team efficiency | 9 | 18.00 |
| As part of institutionalized/official work processes | 2 | 4.00 |
| Other (please specify) | 2 | 4.00 |
| Total | 50 | 100.00 |

Table 12 shows that more than half of the respondents (n = 27, 54.00%) reported being only slightly confident in the accuracy of outputs produced by GenAI tools. A smaller portion (n = 18, 36.00%) indicated being moderately confident, while only one respondent (2.00%) expressed high confidence. Meanwhile, four respondents (8.00%) stated they were not confident. These results show that GenAI is already being used in everyday tasks, but workers are still suspicious of its reliability and need more proof or correction. This cautious approach may be linked to the belief that AI-generated content still necessitates human involvement, as they consider the accuracy of the required work to be critical.

**Table 12**
**Confidence in the Accuracy of GenAI Outputs**

| Confidence in Accuracy | Frequency | Percentage |
|---|---|---|
| Not confident at all | 4 | 8.00 |
| Slightly confident | 27 | 54.00 |
| Moderately confident | 18 | 36.00 |
| Highly confident | 1 | 2.00 |
| Total | 50 | 100.00 |

Table 13 shows that the majority of respondents affirmed that GenAI improves their productivity, with those who agree (n = 29, 58.00%) and an additional (n = 6, 12.00%) selecting strongly agree. No respondents expressed disagreement, while there are still respondents who responded neutral (n = 15, 30.00%). These results suggest a strong overall perception of productivity benefits, though a minority remain undecided about the extent of GenAI's impact on how they work.

**Table 13**
**Perceived Impact of GenAI on Productivity**

| Description | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 0 | 0.00 |
| Disagree | 0 | 0.00 |
| Neutral | 15 | 30.00 |
| Agree | 29 | 58.00 |
| Strongly agree | 6 | 12.00 |
| Total | 50 | 100.00 |

As shown in Table 14, the most frequently reported benefit of using GenAI was the production of better-quality outputs, cited by 29 respondents. This was followed by increased efficiency, mentioned by 27 respondents, and faster task completion, reported by 26 respondents. At the same time, a smaller number of 12 respondents noted improved decision-making. These results indicate that GenAI is primarily valued for enhancing quality, efficiency, and speed in daily tasks rather than supporting strategic or decision-making functions.

**Table 14**
**Benefits Experienced from Using GenAI**

| Benefits | Frequency |
|---|---|
| Increased efficiency | 27 |
| Better quality outputs | 29 |
| Faster completion of tasks | 26 |
| Improved decision-making | 12 |
| Other (please specify) | 0 |

Note: *Multiple responses were allowed*

At the same time, challenges were evident, as presented in Table 15. The most common concern raised by respondents was the reliability and accuracy of results, which were mentioned 28 times. Seventeen respondents identified ethical and data privacy issues, while 10 reported limited access to platforms. Fewer than five respondents cited a lack of skills or digital literacy, while one additional respondent expressed minor concerns regarding daily limits. These findings underscore that, regardless of its advantages, significant challenges persist in maximizing the potential of GenAI in workplace environments.

**Table 15**
**Challenges Encountered in Using GenAI**

| Challenges | Frequency |
|---|---|
| Lack of access to platforms | 10 |
| Lack of skills/ digital literacy | 5 |
| Reliability/ accuracy of results | 28 |
| Ethical/ data privacy concerns | 17 |
| Other (please specify) | 1 |

Note: *Multiple responses were allowed*

**Table 16**
**Perceptions on GenAI as a Replacement for Work Functions**

| Description | Frequency | Percentage |
|---|---|---|
| Strongly disagree | 6 | 12.00 |
| Disagree | 17 | 34.00 |
| Neutral | 16 | 32.00 |
| Agree | 9 | 18.00 |
| Strongly agree | 2 | 4.00 |
| Total | 50 | 100.00 |

As shown in Table 16, respondents expressed more skepticism when asked about the potential of GenAI to replace work functions. A large proportion disagreed (n = 17, 34.00%) or strongly disagreed (n = 6, 12.00%), while almost one-third remained neutral (n = 16, 32.00%). Only a smaller portion agreed (n = 9, 18.00%) or strongly agreed (n = 2, 4.00%). These findings indicate that although respondents recognize the role of GenAI in enhancing productivity, they are less convinced of its potential to substitute for human roles.

**Institutionalization and Future Integration**

Table 17 shows that there aren't many institutional ways for DPWH to support using GenAI. Only a small number of people (n = 2, 4.00%) said official guidance or training was available, while the overwhelming majority (n = 48, 96.00%) said there wasn't. This indicates that the implementation and utilization of GenAI tools are primarily motivated by personal initiative rather than formal organizational support structures. The absence of formal training creates challenges to consistent and responsible usage, especially in guaranteeing that employees have the requisite digital literacy and ethical awareness to take advantage of these technologies fully.

**Table 17**
**Perceptions on GenAI as a Replacement for Work Functions**

| Profile | Response | Frequency | Percentage |
|---|---|---|---|
| Provision of Guidance and Training | Yes | 2 | 4.00 |
| | No | 48 | 96.00 |
| | Total | 50 | 100.00 |

However, Table 18 shows that despite the absence of structured support, perceptions toward the future role of GenAI in DPWH processes appear more favorable. Half of the respondents (n = 25, 50.00%) agreed that GenAI should be formally integrated into institutional workflows, while (n = 19, 38.00%) adopted a more cautious stance by selecting “maybe.” Only a small proportion (n = 6, 12.00%) disagreed outright. These results indicate a strong openness among personnel to embrace GenAI at an organizational level, even without current training or policy guidance.

**Table 18**
**Perceptions on GenAI as a Replacement for Work Functions**

| Profile | Response | Frequency | Percentage |
|---|---|---|---|
| Agree to Integrate GenAI | Yes | 25 | 50.00 |
| | No | 6 | 12.00 |
| | Maybe | 19 | 38.00 |
| | Total | 50 | 100.00 |

As shown in Figure 3, respondents identified a shift between their current applications of GenAI tools and the areas they would prioritize for future integration within DPWH work processes. While correspondence, documentation, and report writing (35) remained the most frequently suggested priority area for GenAI Integration, other functions emerged as high-priority targets despite lower current usage levels. Specifically, administrative tasks (28), process automation (27), and training and learning support (23) were pinpointed as important domains for integration, indicating employees' acknowledgment of GenAI's capacity to optimize routine operations and improve institutional efficacy. Creative and design-related tasks (26) also ranked high, showing that they are still being done the same

way and that there are chances to do more. On the other hand, research and information gathering (21) and technical tasks (14) were not given as much importance, which suggests that they are not seen as immediate priorities for formal integration, even though they are relevant.

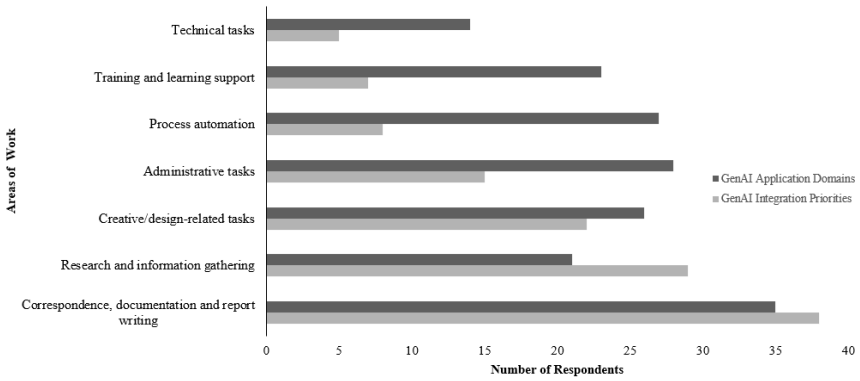


**Figure 3. Suggested Priority Areas for Generative AI Integration**

## CONCLUSION

The findings of this study show that DPWH employees have a strong base of digital literacy. More than half (62%) said they were at an intermediate level, and 38% said they were advanced or expert users. This level of digital readiness means that the workforce is ready to use new technologies like GenAI. A chi-square test ($\chi^2(48, N = 232) = 91.17, p < .001$) showed a significant relationship between task type and tool use. This means that employees' use of GenAI tools is not random, but reflects patterns specific to the task at the time.

Despite this readiness, adoption remains in its early, exploratory stage. Current applications are concentrated in correspondence, documentation, and research, with generalist tools such as ChatGPT spanning multiple areas. At the same time, specialized platforms like Canva and Grammarly/Quillbot are applied in narrower domains. At the same time, some tools, like Firefly, Midjourney, Claude, and Perplexity, are still not being used enough, which suggests that they aren't instrumental or are only helpful in certain situations. Importantly, employees wanted to see integration used more in administrative tasks, process automation, and training support. This shows that their priorities have changed since the last time they used it.

Demographic patterns make this trend even clearer. Younger workers and those in technical or administrative roles were likelier to say they used generative AI often and in various ways. On the other hand, senior staff and those in supervisory or managerial roles used it less often, primarily for review or communication tasks. These differences suggest that adoption is happening from the bottom up, with digital-native and mid-level staff trying things out more. At the same time, higher-level employees are more careful and particular about how they use them.

These findings indicate that GenAI in DPWH is at a pivotal stage: employees are digitally literate, open to adoption, and already applying these tools in meaningful ways, but institutional mechanisms for guidance, training, and policy development lag behind. Bridging this gap could enable DPWH to transition from ad hoc and supplementary use toward strategic and transformative integration. Future initiatives should prioritize formal training, policy frameworks, and ethical guidelines to ensure responsible, efficient, and sustainable adoption of GenAI in government work.

### Recommendations

Based on the findings of this study, several recommendations are advanced to guide the responsible and strategic integration of GenAI within the DPWH and other government institutions.

1. For Policymakers (National Level). Policymakers should use these results as a preliminary basis for establishing frameworks and guidelines for the government's adoption of ethical AI. This includes aligning with existing efforts, like the United Nations Development Programme's Artificial Intelligence Landscape Assessment (AILA) and the Ethical AI Forum in the Philippines, to make AI governance more open, accountable, and private. A clear policy environment can help agencies work together better and keep people from misusing GenAI.
2. For DPWH Human Resource and Administrative Service (HRAS). Formal training programs should be developed to improve digital skills specific to AI tool use, building on employees' existing high level of digital literacy, and integrating GenAI use in the Computer Proficiency Examination (CPE). Workshops, certifications, and capacity-building programs should focus on how to use GenAI in real life for things like documentation, research, administrative work, and technical tasks. HRAS might also consider testing the integration of AI in a few offices to see what works best before implementing it across the whole department.
3. For the DPWH Information Management Service, which is responsible for ICT research and development and managing and maintaining the agency's IT resources, developing its GPT-based tool could be a strategic step forward. A customized GPT model, explicitly trained on DPWH's official publications such as the DPWH Blue Book, the Design Guidelines, Criteria, and Standards (DGCS), Department Orders, Special Orders, Memorandums, and other manuals and references, would allow employees to retrieve accurate and context-specific information more efficiently. This could strengthen trust regarding the reliability and accuracy of results, while also addressing ethical and data privacy concerns since the model would be hosted and managed within the agency's infrastructure. The same can be paralleled from the private sector, like ArcadisGPT, developed by a leading engineering consultancy firm in the Philippines, which demonstrates how a tailored GenAI tool can enhance technical and administrative processes (Rawlinson, 2023).
4. For DPWH stakeholders (engineers, consultants, contractors, and the public). The integration of GenAI has the potential to deliver faster, more transparent, and higher-quality government services. Responsible use of AI must always be stressed, especially in critical areas like planning, designing, and buying infrastructure. The process should still be based on human intervention and verification, since AI can help with accuracy and efficiency, but can't completely replace professional judgment and responsibility.
5. For Future Research. Further studies should explore additional dimensions of AI acceptance, such as effort expectancy and social influence, as articulated in the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). Longitudinal research can track how GenAI adoption evolves as organizational policies, training, and infrastructure mature. Comparative studies across other government agencies could also provide insights for crafting broader national AI strategies.

Collectively, these recommendations emphasize that GenAI should not be viewed as a replacement for existing systems, but rather as a complementary tool that enhances productivity, efficiency, and transparency. To responsibly scale AI integration in the Philippine government sector, policymakers, DPWH HRAS, DPWH IMS, and stakeholders will need to work together.

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