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Assessment of Digital Skills and Training in Somali Government Institutions

Abdirizak Hussein Mohamed[1], Abdullahi Mohamud Sharif[2]
Somali National University
[1]abdirizakcuul@snu.edu.so, [2]saakuut@snu.edu.so
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Abstract

With an emphasis on employee competencies, access to digital tools, and institutional factors that impact digital capacity-building, this study investigates the status of ICT training and digital skills within Somali government institutions. Understanding the readiness of the public sector workforce is crucial for enhancing service delivery, transparency, and administrative effectiveness as Somalia moves forward with its national digital transformation agenda. data on digital literacy, access to ICT resources, training experiences, and perceived barriers to skill development were gathered from 138 government employees using structured questionnaires and a descriptive research design. The results show that most workers are young, highly educated, and have intermediate to advanced digital skills. They also show a strong desire to improve their digital competencies. significant skill gaps still exist in crucial areas like the use of Microsoft programs, online communication tools, and government digital services, even though computers are widely accessible, and ICT tools are frequently used. Additionally, even though 70% of respondents said they had attended ICT-related training, the most significant obstacle to digital advancement was found to be the absence of regular and organized training opportunities. Skill development is further hampered by institutional constraints, such as insufficient organizational support, unequal distribution of ICT programs, and low awareness of available training. The study concludes that although Somalia's public sector has a lot of potential for digital transformation, real progress will need better coordination between ministries and the creation of standardized, well-resourced training frameworks. Enhancing public sector performance and promoting sustainable national digital governance will require bolstering digital capacity-building initiatives.

Keywords: ICT training, E-Government, Somalia digitalization, Technology Adoption, Public Sector Innovation.

Introduction

Digital transformation has emerged as a critical pillar of contemporary governance, reshaping how public institutions operate and deliver services in an increasingly interconnected world (Forum et al., 2025). Across the globe, governments are adopting digital technologies to improve efficiency, enhance transparency, and strengthen citizen engagement. In developing nations such as Somalia, these advancements offer an opportunity to accelerate institutional development and modernize administrative systems. Despite these potential benefits, the effectiveness of digital transformation initiatives is largely contingent upon the digital competence of public sector employees and the availability of structured, continuous training programs (Mustofa et al., 2025).

Somalia has made notable progress toward digitalization in recent years, supported by national ICT policies, capacity-building strategies, and contributions from international development partners (Hashi, 2025). These initiatives seek to improve service delivery, expedite government operations, and synchronize public institutions with international technological trends. Despite the existence of strategic frameworks, there is still a dearth of empirical data regarding government employees' true levels of digital proficiency. The degree to

which current ICT training programs fill skill gaps or significantly advance institutional capacity-building is equally ambiguous. For policymakers, development stakeholders, and government organizations looking to further national digital transformation objectives, this evidence gap presents a serious obstacle.(Sadat et al., 2025)

Effective digital transformation requires more than technological infrastructure; it demands a workforce equipped with the necessary digital literacy, technical competencies, and problem-solving capabilities to utilize digital tools effectively. Yet Somali government institutions vary widely in their access to ICT resources, exposure to training opportunities, and organizational readiness for digital adoption. In many ministries, digital tasks are performed by employees with limited formal training, which may lead to inefficiencies, reduced productivity, and inconsistent use of digital systems. Furthermore, the absence of standardized training frameworks—combined with inconsistent funding and limited coordination across agencies—poses additional barriers to cultivating a digitally competent public sector workforce.

Therefore, assessing digital skill levels among government employees is essential for identifying critical weaknesses and understanding existing disparities across institutions. Equally important is evaluating the quality, availability, and effectiveness of current training programs to determine whether they adequately support the digital transformation agenda. Such an assessment can provide valuable insights into how government agencies can strengthen capacity-building efforts, prioritize resource allocation, and design targeted interventions that respond to the specific needs of their workforce.(Audrin et al., 2024)

Moreover, understanding digital skills within government institutions has broader policy implications. Evidence-based insights can inform the development of national digital strategies, support the successful rollout of e-government initiatives, and enhance the overall performance and accountability of public institutions. As Somalia seeks to modernize governance, promote transparency, and improve citizen service delivery, building a digitally capable public sector becomes an indispensable requirement.(Taufiqurokhman et al., 2025)

In summary, the assessment of digital skills and training in Somali government institutions is a multidimensional undertaking shaped by technological, organizational, and policy factors. A comprehensive understanding of these dynamics is crucial for advancing sustainable digital transformation, strengthening public sector effectiveness, and aligning government operations with emerging global digital governance standards. This study seeks to contribute to this understanding by examining the current state of digital competencies, evaluating training mechanisms, and identifying opportunities for improvement within Somalia's public sector landscape.

Literature Review

The global shift toward digital governance has intensified the demand for digitally competent public sector workforces, positioning digital skills as a critical determinant of institutional performance and service delivery. According to contemporary digital governance literature, effective public administration increasingly relies on employees' ability to navigate digital tools, analyze data, and utilize ICT resources to support transparent and efficient operations (Hashi, 2025). In developing contexts, digital skills are particularly essential due to persistent structural constraints, including limited ICT infrastructure, low digital literacy, and inconsistent access to training opportunities (Nirmani I.A.P., 2025).

In the African context, studies highlight that governments are investing in digital strategies to enhance state capacity, yet significant gaps remain in human resource preparedness. Research conducted across East African public institutions indicates that many civil servants lack foundational digital competencies, resulting in underutilization of e-government systems and reduced efficiency in administrative workflows (Shibambu, 2024). These skill gaps are often linked to inadequate training frameworks, limited

funding, and fragmented ICT development programmers.(Audrin et al., 2024)

Somalia presents a unique case where efforts toward digital transformation have accelerated over the past decade, driven by national ICT policies, capacity-building initiatives, and international development partnerships. Despite these advancements, existing studies suggest that Somali government institutions still face substantial challenges related to workforce digital literacy and organizational readiness (Hashi, 2025). Research on public sector capacity in Somalia notes that while ICT adoption is increasing, the digital capabilities of employees vary widely between ministries, reflecting disparities in training access, resource distribution, and institutional priorities.(Hashi, 2025)

Moreover, literature on digital skills development emphasizes the importance of structured, continuous training programs that move beyond basic computer literacy toward advanced competencies such as cybersecurity awareness, data management, and system integration (Hashi, 2025). However, evidence from fragile-state environments shows that training initiatives are frequently short-term, donor-driven, and poorly aligned with institutional needs, limiting their long-term impact (Marquardt et al., 2025).

Overall, the literature underscores that successful digital transformation in Somalia requires a systematic evaluation of existing digital skills, identification of competency gaps, and the establishment of coordinated, sustainable training frameworks. Strengthening these areas is essential for advancing e-government, improving public sector effectiveness, and aligning Somalia with global digital governance trends.(Hashi, 2025).

Methodology

Descriptive research design used to explore the correlation between the dependent and the independent variables and to collect any relation between these variables. This type of research design selected for this study is denominated descriptive research. This descriptive design is often used to navigate “what is” by combining quantitative and qualitative research methodologies. Descriptive studies employ observational and survey methods to collect descriptive data. This method is suitable for the study because is help the collection of a large amount of data from a sizable population.

The population targeted was reached up to 211 Permanent and Temporary employees in Somali Government Institutions. Because they are based on the study and provided the relevant answers to the research questions. This study used probability sampling method, because of finite and registered population. The procedure selected in this study was simple random sampling method, because Simple random sampling is a sampling technique where every Person in the population has an equal chance of being selected in the sample. Sampling method is one of the important factors which determines the correctness of survey results.

The selection of this instrument was guided by the nature of the data to be collected, the time available, and the overall objectives of the study. The aim of using this tool is to investigate the relationship between the dependent and independent variables.

Primary data were collected using a structured questionnaire distributed to government employees. The questionnaire contained closed-ended questions designed on a Likert scale to measure the level of digital skills, availability of ICT training, access to technology, and challenges faced.

The collected data was coded and analyzed using the Statistical Package for Social Sciences (SPSS) and Excel. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the responses. Tables and graphs were generated to support interpretation.

Result

The findings of the study provide a clear overview of the demographic characteristics and digital skill levels of employees working in Somali government institutions

Demographic Information

Table 1 provides an overview of the demographic characteristics of the respondents, including gender, age group, and highest level of education achieved. In relation to gender, the findings indicate that males account for 76.8% of the survey, while females make up 23.2%. This fact presents an overwhelmingly male sample. In terms of age, most of the respondents are aged between 18-34 (72.5%) and 35-44 (22.5%) with ages 45-54 making up 5.1%. This shows that the sample reaches a largely young working-age population. With respect to education, most of the respondents reported they hold a Bachelor's degree (65.2%), while a combined 32.6% hold a Master's level or higher, leaving just 2.2% reporting secondary level of education. This highlights a range of education with most of the sample being educated at a tertiary level. In summary, the findings from the demographic data show a young, male-dominated, well-educated workforce.

Table 1. Demographic Information

Variable	Category	Frequency	Percent
Sex	Male	106	76.8%
	Female	32	23.2%
Age Group	18–34	100	72.5%
	35–44	31	22.5%
	45–54	7	5.1%
Highest Educational Qualification	Secondary School	3	2.2%
	Bachelor's Degree	90	65.2%
	Master's or higher	45	32.6%

Digital Access & Skills

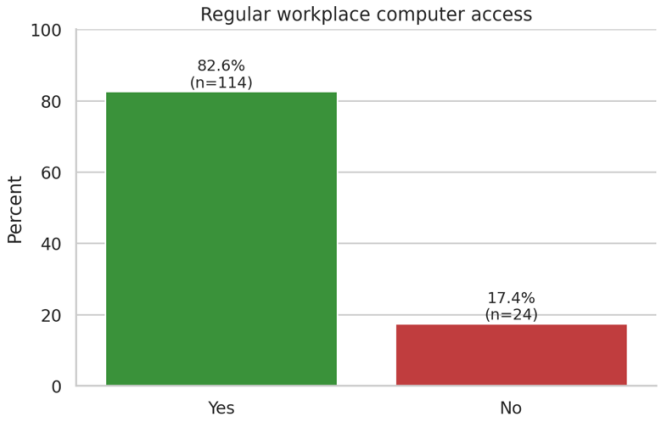

Figure 1: Regular Workplace Computer Access

Figure 1 shows that 82.6% of respondents report regular workplace computer access, while 17.4% do not. Analytically, this matters because it implies a persistent structural constraint for a sizeable minority: even if training is offered, those without routine access are less likely to practice, retain, and translate skills into productivity gains. In institutional settings, this kind of access gap typically produces uneven performance across units and job roles, and can widen competency disparities over time.

This access profile is consistent with frequent ICT usage patterns. As shown in Figure 2, a majority uses ICT tools daily (58.7%), but over one quarter use them only occasionally (26.8%), with smaller proportions using them weekly (8.7%) or never (5.8%). This distribution suggests that digital work practices are established for many staff, yet a non-trivial group remains outside continuous digital routines. In practical terms, "occasional" users often experience limited task exposure and lower skill consolidation, which tends to reduce confidence and slow adoption of new systems.

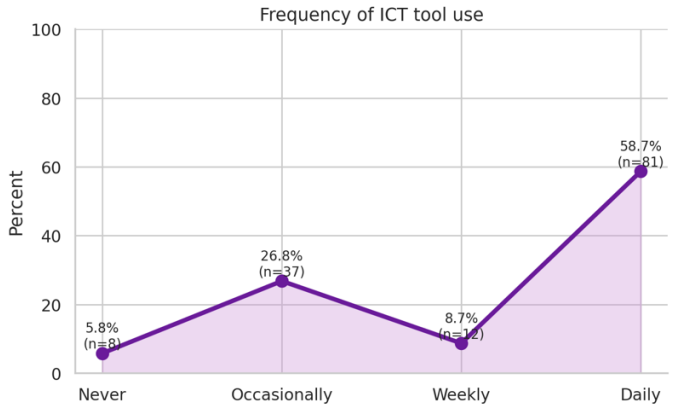

Figure 2: Frequency of ICT Tool Use

As shown in figure 3, self-reported skill levels are concentrated in the upper categories: 44.9% advanced and 43.5% intermediate, with 11.6% beginner. The key analytical implication is that the system likely has substantial internal capacity (a large "intermediate/advanced" pool). However, aggregate self-ratings can overstate readiness if competence varies by task type. That is exactly what the competency heatmap clarifies.

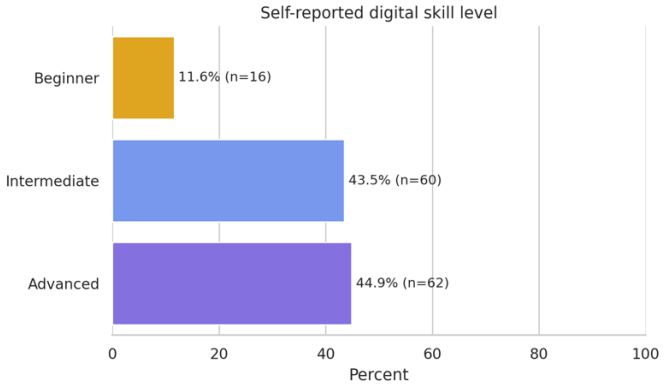

Figure 3: Self-reported Digital Skill Level

Moreover, the heatmap shown in figure 4 indicates that confidence is not uniform across competencies. The distribution tends to be stronger for common digital office and communication tasks, and more mixed for tasks that are either more technical (for example, spreadsheet-oriented work) or more institutional (for example, government digital service use). This matters for Somali government institutions because service delivery modernization depends less on generic familiarity and more on reliable, task-specific competence—especially in workflows linked to reporting, data handling, and digital public services. The policy implication is that training should be competency-targeted rather than generic.

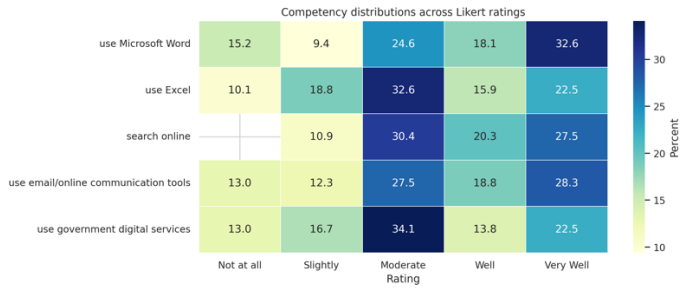

Figure 4: Competency Distribution Across Likert Ratings

In addition to that, task-based competence suggests stronger confidence in widely used, general-purpose tools and relatively weaker confidence in more specialized or institutional digital functions. Even among the strongest items, the "Very Well" shares remain around one-third or less, which implies that confidence is not uniformly high even for common tasks. The comparatively lower "Very Well" confidence for tasks such as Excel and government digital services implies that capability may be uneven where work requires structured data handling or navigation of institutional platforms. Substantively, this points toward an "intermediate plateau" phenomenon: many staff may be functional for routine communication and basic document work, but less consistently confident in tasks that underpin efficiency and service delivery (spreadsheets, digital service workflows). Therefore, the central digital skills challenge is not merely access or motivation, but the distribution of applied competence across job-relevant tasks.

Training, Support & Barriers

Training exposure is widespread but not universal. The training chart shown in figure 5 indicates that 70.3% report having attended ICT/digital skills training, while 29.7% have not—so coverage is substantial but incomplete. Crucially, perceptions of opportunity are split:

39.9% say enough opportunities exist, 39.1% say they do not, and 21.0% are unsure. This combination typically signals *uneven provision and/or weak communication*: training may exist in some ministries or units, but is not consistently accessible, visible, or relevant across the system. This gap matters because it likely overlaps with the access and usage divide: those without regular access or without routine ICT use may also be less likely to participate in, complete, or benefit from training. Consequently, training coverage alone should not be interpreted as system-wide readiness; the remaining untrained minority may represent precisely the group most in need of structured support.

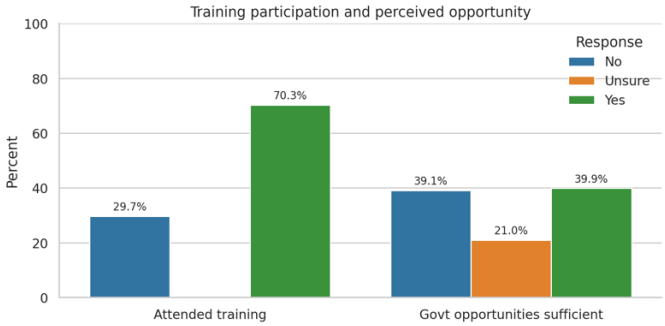

Figure 5: Training Participation and Perceived Opportunity

Perceptions of whether sufficient learning opportunities exist are sharply divided. Respondents split almost evenly between Yes (39.9%) and No (39.1%), with 21.0% unsure. This pattern is analytically significant: it suggests that opportunity is either inconsistent across institutions/units, poorly communicated, or varies in relevance/quality to different roles. The sizable "unsure" share also signals an information and coordination problem, where some staff may not know what opportunities exist or how to access them.

At the same time, readiness to learn is extremely strong. Only 0.7% report being "not at all" willing and 2.2% slightly willing, 46.4% "Very Well" and 37.7% "Well", with only 2.9% in the bottom two categories combined. This indicates that low adoption is unlikely to be driven primarily by resistance or negative attitudes. Instead, the evidence supports a constraints-based explanation: staff are willing, but encounter structural barriers that prevent participation and continued development. This is an important finding because it shifts the explanation away from individual resistance and toward institutional conditions. In other words, Somali government institutions appear to have strong latent demand for digital upskilling; the core issue is enabling that demand through structured opportunities and support.

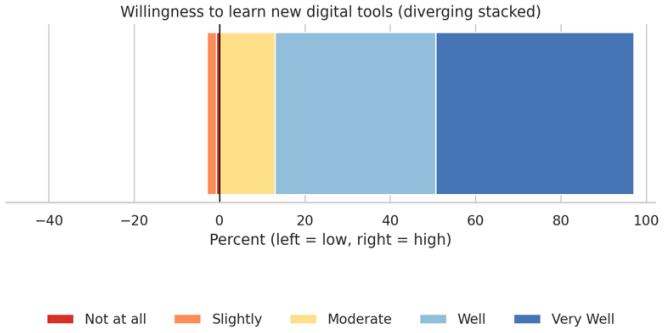

Figure 6: Willingness to Lear New Digital Tools

The barrier profile reinforces this interpretation. The dominant constraint as shown in figure 7 is "No training opportunities" (56.5%), which dwarfs other barriers. The second most cited barrier is "Lack of department support" (19.6%), pointing to organizational enablement issues (for example, time allowance, manager prioritization, workload protection, or follow-up). Smaller shares report lack of awareness (7.2%) and equipment constraints (6.5%), which still matter because they can systematically exclude certain groups even if overall access appears high. Taken together, the barrier distribution indicates that the main bottleneck is not individual willingness but the *availability, institutional support, and consistent provision* of training.

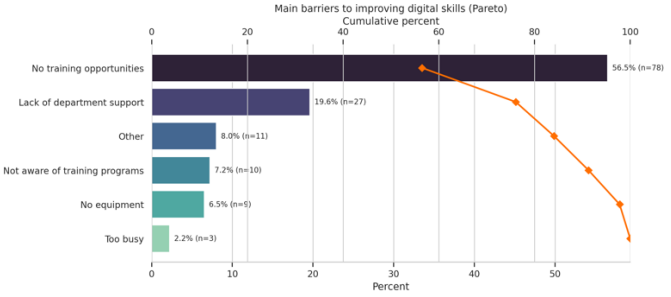

Figure 7: Main Barriers to Improving Digital Skills

Additionally, institutionalization of training appears mixed. A slim majority report that their ministry has an ICT training program/coordinator (55.1%), while 44.9% report it does not. This is consequential: where no coordinating function exists, training often becomes ad hoc, less evenly distributed, and less aligned to role-specific competency needs—consistent with the split perceptions of opportunity and the high reporting of "no training opportunities."

On the other hand, figure 8 supports the institutional explanation: only **55.1%** report the presence of a ministry ICT training program/coordinator, while **44.9%** report none. Where coordination mechanisms are absent, training tends to be episodic and dependent on external initiatives rather than embedded in organizational routines. This aligns with the barrier profile (opportunity and departmental support) and helps explain why opportunities are perceived as insufficient even though many individuals have attended training at some point.

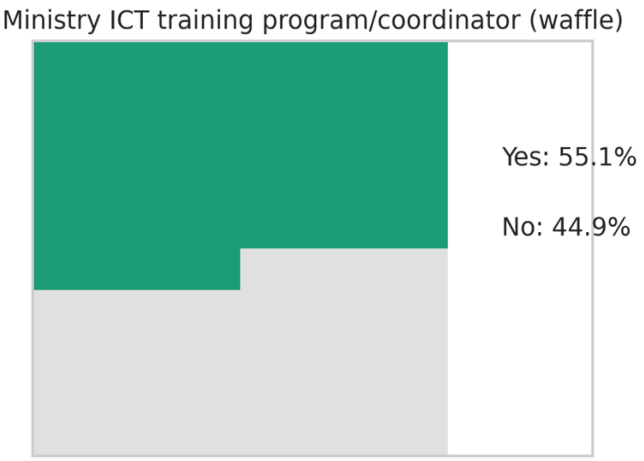

Figure 8: Ministry ICT

Somali government institutions appear to have a workforce that is largely motivated and frequently engaged with ICT tools, with many respondents identifying as intermediate or advanced. Yet the system shows persistent unevenness in (a) task-specific competence, (b) equitable training access, and (c) organizational support structures that enable sustained learning. The percentages collectively support a coherent conclusion: strengthening digital performance will likely depend less on changing attitudes and more on institutionalizing training provision, improving departmental support for participation and practice, and targeting training toward the lower-confidence task domains that directly affect administrative efficiency and digital service delivery.

Conclusion

The evidence indicates that Somali government institutions possess a generally enabling baseline for digital work, but that this baseline has not been consistently converted into systematic capability development. Workplace access to computers is relatively high (82.6% report regular access), and ICT tool use is routine for many staff (58.7% report daily use). Self-reported proficiency is also concentrated above beginner level (43.5% intermediate; 44.9% advanced). Taken together, these findings suggest that a substantial portion of the workforce operates in digitally mediated workflows and perceives itself as capable of engaging with common tools.

However, the results also show that digital capacity is uneven and constrained by institutional factors rather than individual disposition. A meaningful minority lack regular computer access (17.4%), and task-level confidence varies across competencies, implying that "overall skill" does not translate uniformly into job-relevant performance. Most notably, the training ecosystem appears inconsistent. While 70.3% report having attended some ICT training, perceptions of whether sufficient opportunities exist are polarized (39.9% yes vs 39.1% no; 21.0% unsure), suggesting uneven provision, weak communication, or limited relevance of available offerings. In parallel, willingness to learn is exceptionally strong (84.1% rate willingness as Well/Very Well), indicating that resistance to learning is not the primary obstacle. Instead, the barrier profile identifies opportunity and organizational support as the dominant constraints, with "no training opportunities" (56.5%) and "lack of department support" (19.6%) far outweighing other limitations. The mixed presence of institutional coordination

mechanisms (55.1% report an ICT training program/coordinator; 44.9% do not) further implies that training and skills development are not yet fully institutionalized across ministries.

Overall, the findings support a clear interpretation: Somali public sector digital skills development is less limited by worker motivation and more limited by the availability, coordination, and workplace enablement required to transform willingness into sustained competence and improved service delivery.

Recommendations

1) Institutionalize training governance to reduce uneven provision

A central finding is that perceptions of opportunity are divided and many respondents report a lack of opportunities. Establishing (or strengthening) an ICT training coordination function in ministries without one—paired with a common government-wide framework—would address fragmentation. The goal is to move from ad hoc training to a predictable annual cycle that includes needs assessment, training scheduling, and completion tracking. This recommendation is directly supported by the finding that 44.9% report no program/coordinator.

2) Shift from generic digital literacy to competency-based, role-relevant training

Given the gap between high self-reported overall skill and uneven task-level competence, training should be structured around competency standards tied to actual job functions (administration, HR, finance, procurement, M&E, service counters). This reduces "training that feels irrelevant," increases uptake, and produces more measurable gains than broad, introductory content—particularly in areas where the competency heatmap indicates weaker confidence.

3) Convert willingness into participation by addressing departmental support

Because lack of department support (19.6%) is the second most-cited barrier, training design should include workplace enablement measures: protected learning time, supervisor endorsement, and follow-up practice tasks. Without these mechanisms, even well-designed courses will produce limited behavior change because staff cannot reliably apply new skills under routine workload conditions.

4) Expand opportunity in a targeted way, prioritizing coverage gaps

The dominant constraint (no training opportunities, 56.5%) implies that expanding availability is the highest-impact intervention. A practical approach is to prioritize staff who are either (a) beginners (11.6%) or (b) not frequent users (26.8% occasionally; 5.8% never) since they are most at risk of exclusion from digital workflows. This also supports equity by targeting those least able to self-upskill through routine use.

5) Address access constraints to prevent structural exclusion

While access is generally high, the 17.4% without regular workplace computer access represent a structural constraint that training alone cannot solve. Ministries should pair training expansion with basic access planning (shared workstations, scheduled access time, or role-appropriate devices). Otherwise, the return on training investment will remain uneven because practice opportunities are unequal.

6) Monitor outcomes beyond attendance: focus on demonstrated competence

Since 70.3% report past training but opportunity perceptions remain split, monitoring should emphasize demonstrated capability rather than only participation. Simple post-training assessments tied to competencies, alongside supervisor-verified application tasks, would help ensure training translates into workplace performance.

In conclusion, Somali government institutions show strong foundational readiness for digital transformation—characterized by high access, frequent ICT use, and very high willingness to learn. Yet the primary bottlenecks are institutional: limited and uneven training opportunities, insufficient departmental support

for skill development, and incomplete coordination structures across ministries. Addressing these constraints through institutionalized training governance, competency-based programming, workplace enablement, and targeted coverage expansion is likely to produce the greatest improvements in digital capability and, ultimately, the effectiveness and efficiency of public service delivery.

Reference

Audrin, B., Audrin, C., & Salamin, X. (2024). Digital skills at work – Conceptual development and empirical validation of a measurement scale. *Technological Forecasting and Social Change*, *202*(September 2023), 123279. https://doi.org/10.1016/j.techfore.2024.123279

Forum, N., Sector, B., & Reality, B. (2025). *Kenza BENGHALIA 1 / Hadj Kouider GOURINE 2 1 2 University of chlef, lab (*. 1–20.

Hashi, A. I. (2025). Digital Governance and Public Sector Innovation in Somalia: Enhancing Transparency, Efficiency, and Citizen Participation through Technology. *European Journal of Information and Knowledge Management*, *4*(1), 1–24. https://doi.org/10.47941/ejikm.3124

Marquardt, J., Wijayanti, F. W., & Fathurrahman, R. (2025). Long-term programs, short-term effects? How development partners struggle to institutionalize renewable energy solutions in Indonesia. *Earth System Governance*, *26*(August), 100282. https://doi.org/10.1016/j.esg.2025.100282

Mustofa, A., Haryati, E., & Ismail, S. (2025). the Impact of Digital Transformation on Public Services Governance: a Quality Assessment Scale Approach in Urban Municipalities. *Journal of Governance and Regulation*, *14*(4), 156–165. https://doi.org/10.22495/jgrv14i4art15

Nirmani I.A.P. (2025). Barriers to digital participation in developing countries: Identifying technological, social, and cultural obstacles to community involvement. *GSC Advanced Research and Reviews*, *23*(2), 061–071. https://doi.org/10.30574/gscarr.2025.23.2.0130

Sadat, A., Lawelai, H., & Yudarsat, A. P. (2025). The Impact of Digital Governance on Public Service Efficiency: A Cross-Country Analysis. *Journal of Governance and Local Politics*, *7*(1), 22–35.

Shibambu, A. (2024). Transformation of digital government services in the public sector in South Africa. *Africa's Public Service Delivery and Performance Review*, *12*(1), 1–7. https://doi.org/10.4102/apsdpr.v12i1.753

Taufiqurokhman, Yunas, L. D. P., Amândio de Araújo Sarmento, Muzarodin, I., Mulyaningsih, Perdana, M. R., & Maulana, A. H. (2025). The Role of E-Government Innovation in Enhancing Public Service Performance and Strengthening Transparent Governance. *Journal of the American Institute*, *2*(5), 744–753. https://americanjournal.us/index.php/american/article/view/100%0Ahttps://americanjournal.us/index.php/american/article/download/100/78