

Impact of Digitalization on Supply Chain Efficiency at Ram Transporters Limited, Rwanda

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Abstract: This study examined the relationship between digitalization and supply chain efficiency at RAM Transporters Ltd in Rwanda. It focused on three dimensions of digitalization: real-time data monitoring, automated order processing and scheduling, and digital procurement systems. A descriptive cross-sectional research design employing a mixed-methods approach was adopted. The target population comprised 45 employees of RAM Transporters Ltd. Quantitative data were collected using questionnaires, of which 35 complete responses were obtained, while qualitative data were collected through semi-structured interviews with five key informants. Quantitative data were analyzed using descriptive statistics, Pearson's correlation analysis, and multiple linear regression in SPSS Version 25, while qualitative data were analyzed thematically. The findings indicated a low overall level of digitalization, with a digitalization index of 34.4%. Real-time monitoring recorded the highest mean score ($M = 2.45$), followed by automated scheduling ($M = 1.95$) and digital procurement ($M = 1.65$), while supply chain efficiency had an overall mean score of 2.10. Pearson's correlation analysis revealed positive and statistically significant relationships between real-time monitoring and supply chain efficiency ($r = .645$, $p < .01$) and between automated scheduling and supply chain efficiency ($r = .521$, $p < .01$). The multiple regression model explained 48.7% of the variance in supply chain efficiency, with real-time monitoring emerging as the only statistically significant individual predictor ($\beta = .432$, $p = .024$). Qualitative findings further revealed continued reliance on manual processes, fragmented use of digital technologies, and resistance to technological change. The study concludes that digitalization is significantly associated with supply chain efficiency at RAM Transporters Ltd, with real-time monitoring showing the strongest measurable relationship in the regression model. The study recommends strengthening real-time monitoring systems, progressively automating core supply chain processes, developing integrated digital procurement systems, and investing in staff training and change-management initiatives.

Keywords: Digitalization, Supply Chain, Ram Transporters Limited, Rwanda.

1. INTRODUCTION

Digitalization is increasingly transforming supply chain and logistics management through technologies such as Enterprise Resource Planning (ERP), the Internet of Things (IoT), cloud computing, big data analytics, Global Positioning System (GPS) tracking, artificial intelligence (AI), and automation. These technologies improve information visibility, coordination, monitoring, forecasting, and decision-making, thereby creating opportunities to enhance supply chain efficiency (He et al., 2024; Liu & Chi, 2024; Yu et al., 2024). However, the benefits of digitalization depend on effective integration, interoperability, organizational capabilities, and appropriate use of digital systems (Fernandes et al., 2024; Winkelmann et al., 2024). In developing economies, digitalization offers opportunities to improve logistics performance, but adoption is often constrained by limited financial resources, inadequate technical skills, infrastructure gaps, interoperability challenges, and resistance to organizational change. Effective digital transformation therefore requires more

than acquiring technology; it depends on integrating digital tools into organizational processes and developing the human and technical capacities needed to use them effectively (Boutaqbout et al., 2024; Fernandes et al., 2024).

Rwanda has identified digital transformation as a key component of national development. The ICT Sector Strategic Plan 2024–2029 promotes digital infrastructure, innovation, and the adoption of digital technologies across public and private sectors, including transport and logistics (Ministry of ICT and Innovation [MINICT], 2024). Digital technologies are increasingly being applied in Rwanda's transport sector, while investments such as the Kigali Logistics Platform Connectivity Development Project aim to strengthen logistics connectivity and regional trade (Boutueil & Lesteven, 2024; World Bank, 2024).

Despite these initiatives, Rwanda continues to face logistics-performance challenges. The World Bank's 2023 Logistics Performance Index ranked Rwanda 102nd among 139 countries, highlighting the continuing need to strengthen areas such as logistics competence, infrastructure, tracking and tracing, and timeliness (World Bank, 2023). Logistics firms, particularly smaller enterprises, may also face challenges related to the cost of technology, limited technical expertise, staff training, and integration of digital systems. These challenges can limit the effective use of digital technologies in supply chain operations (Boutaqbout et al., 2024).

The increasing integration of regional markets through initiatives such as the African Continental Free Trade Area (AfCFTA) further increases the need for efficient, responsive, and technology-enabled logistics systems. Improved transport infrastructure, digital technologies, trade processes, and regional supply chain integration are important for strengthening Africa's trade competitiveness and economic resilience (UNCTAD, 2024).

Within this context, digital tools such as real-time monitoring, automated order processing and scheduling, and digital procurement are particularly relevant to supply chain efficiency. Real-time monitoring can improve operational visibility, automated scheduling can support timely coordination, and digital procurement can facilitate information sharing and supplier coordination. Recent empirical evidence indicates a positive association between digital transformation and supply chain efficiency, although the strength of this relationship varies across organizational contexts (He et al., 2024; Liu & Chi, 2024; Yu et al., 2024).

RAM Transporters Ltd is a logistics company operating in Rwanda whose activities involve transportation and related supply chain processes. These operations require effective coordination of orders, transportation schedules, procurement, and shipment information. Although digital technologies have the potential to improve these processes, the extent of their adoption and integration and their relationship with supply chain efficiency at RAM Transporters Ltd remain insufficiently documented. This creates a need for organization-specific empirical evidence.

Therefore, this study examined the relationship between digitalization and supply chain efficiency at RAM Transporters Ltd in Rwanda. Specifically, it assessed real-time data monitoring, automated order processing and scheduling, and digital procurement systems and examined their relationships with supply chain efficiency. The study contributes context-specific evidence to the growing literature on digitalization and supply chain performance in Rwanda and other developing economies.

2. METHODOLOGY

2.1 Research design

This study used a descriptive cross-sectional research design.

2.2 Target Population

Forty workers from RAM Transporters Ltd. in Kigali, Rwanda, made up the study's target population. These include transportation coordinators, sales and marketing officers, operations managers, IT support staff, drivers, warehouse officers, warehouse assistants, and clearing agents

2.3 Sample Design

The study used a census sampling technique, where the entire population had been included in the sample.

2.4 Data collection Methods

In order to gather thorough and trustworthy information about how digitalization has affected RAM Transporters Ltd.'s supply chain efficiency, both primary and secondary data were gathered utilizing a mixed-methods approach.

3. RESULTS AND DISCUSSION

3.1 Demographic Characteristics of Respondents

The demo information of Respondent helps in understanding the background of the respondents and is crucial for interpreting their perceptions digital tools and efficiency. The demographic data for the 35 questionnaire respondents is summarized in Table 1. Represented below.

Table 1: Demographic profile of the respondent (N=35)

Demographic Characteristic	Category of respondents	Frequency of the respondents	Percentage (%)
Gender	Male	23	65.70%
	Female	12	34.30%
Age	Below 25 years	5	14.30%
	25 - 35 years	19	54.30%
	35 - 45 years	9	25.70%
	45 years and above	2	5.70%
Profession	Transport	9	25.70%
	Warehouse	15	42.90%
	IT	4	11.40%
	Management	7	20.00%
Work experience	Less than 1 year	3	8.60%
	1 - 3 years	16	45.70%
	Over 3 years	16	45.70%

Interpretation

The profile indicates a predominantly male 65.7% and relatively young workforce, with the majority 54.3% falling in the 25-35 age bracket. A demographic which is typically more receptive to digital technology. The warehouse department constituted the largest respondent group with 42.9%, which is logical as they are at the heart of supply chain operations in RAM Transporters. Critically, 91.4% of respondents had over one year of experience, with 45.7% having over three years. This signifies that the quantitative data reflects the perspectives of a stable and experienced workforce intimately familiar with the company's entrenched manual processes, thereby lending greater credibility to their assessment of the current state of digitalization.

3.2 Descriptive statistics of study variables

This section provides a detailed breakdown of the questionnaire respondents' perceptions. The **Digitalization Index** is a composite score calculated as the average of the mean scores for the three digitalization variables, converted to a percentage. The results, summarized in Table 2, paint a concerning picture.

Descriptive Statistics for Study Variables (N=35)

Table 2: Descriptive Statistics for the study Variables

Variable	Mean Score	Standard Deviation	Interpretation
Real-Time Monitoring	2.45	1.12	Disagreement
Automated Scheduling	1.95	1.05	Strong Disagreement
Smart Procurement	1.65	0.98	Strong Disagreement
Digitalization Index	1.87	-	37.4% (Low)
Supply chain efficiency	2.1	0.94	Disagreement

*Scale:1.00-1.80 (Strongly disagree); 1.81-2.60 (Disagree); 2.61-3.40 (Neutral); 3.41-4.20 (Agree); 4.21-5.00(Strongly agree) *

*Digitalization Index: $(1.87 / 5) * 100 = 37.4\%$ *

Interpretation:

The overarching finding is that the digital maturity of RAM Transporters Ltd is critically low, at 37.4%. This signifies a profound reliance on manual processes and a significant gap compared to modern logistics standards.

Real-Time Monitoring (M=2.45, SD=1.12): As the highest-rated dimension, it still falls in the "Disagree" category. The high standard deviation indicates extreme variability in responses, suggesting that while a few vehicles might have a basic tracking system, its use is inconsistent and far from being an integrated system.

Automated Scheduling (M=1.95, SD=1.05): This score, which is bordering on "Strongly disagree," confirms that scheduling is a manual, likely spreadsheet-driven or even paper-based process, prone to errors and inefficiencies.

Smart Procurement (M=1.65, SD=0.98): This is the lowest score, firmly in the "Strongly disagree" range. It reveals a procurement function operating on phone calls, emails, and personal relationships, with no digital tools for supplier management, order tracking, or spend analysis.

The dependent variable, **Supply chain efficiency (M=2.10, SD=0.94)**, is perceived as poor. This is a logical and direct consequence of the absence of digital tools to optimize, visualize, and streamline operations.

3.2.1 Detailed Item Analysis of Digitalization Constructs

To gain deeper insight, a breakdown of the individual item scores for each construct is provided.

Item Analysis for Real-Time Monitoring Systems**Table 3: Item analysis for real-time Monitoring**

Item	Mean	SD
Real-time data is available in our supply chain systems.	2.6	1.19
Real-time data helps in detecting delays quickly.	2.45	1.14
Using real-time data has improved decision-making.	2.3	1.08
GPS and dashboards improve operational visibility.	2.55	1.22
Real-time updates enhance coordination among departments.	2.35	0.97

Item Analysis for Automated Scheduling Systems**Table 4: Item analysis for automated scheduling systems**

Item	Mean	SD
Our organization uses automated order processing systems.	1.85	1.04
Automation has reduced order errors and delays.	1.90	1.12
Order processing is faster due to digital systems.	2.00	1.05
Digital order systems improve communication between departments.	2.05	1.02
Customers receive services more efficiently due to automation.	1.95	1.02

Table 5: Item analysis for smart procurement systems

Item	Mean	SD
11. We use smart procurement systems for purchasing.	1.55	0.89
12. Smart procurement reduces delays in receiving goods.	1.70	1.03
13. Digital procurement helps prevent overstocking/stockouts.	1.65	0.94
14. The procurement process has become faster and more accurate.	1.60	0.95
15. Procurement automation has helped reduce operational inefficiencies.	1.75	1.09

Interpretation of Item Analysis:

The item-level analysis confirms the bleak picture. For smart procurement, the item "We use smart procurement systems in purchasing" received the lowest mean score (1.55), confirming the near-total absence of the concept. Similarly, for automated scheduling, the basic statement about using automated systems (Item 6, M=1.85) is strongly disagreed with. The consistently low scores across all items, with standard deviations often near or above 1.0, point to a widespread and deeply rooted problem, not just isolated issues.

3.3 Diagnostic Test for Regression Assumptions

Before performing multiple linear regression analysis to test the hypotheses, diagnostic tests were conducted to verify that the data met the key assumptions of regression analysis. The results of these tests are presented below.

Test for Normality.

Shapiro-Wilk Test:

Table 6: Shapiro-Wilk Test

variable	Shapiro-Wilk statistics	df	Sig. (P -value)	Decision
Real-Time Monitoring Systems	0.972	35	0.134	Normal
Automated Scheduling	0.968	35	0.102	Normal
Smart procurement Systems	0.965	35	0.087	Normal
Supply Chain Efficiency	0.974	35	0.156	Normal
Residuals	0.979	35	0.187	Normal

Interpretation

The Shapiro-Wilk test results show p-values greater than 0.05 for all variables and residuals, indicating that the data do not significantly deviate from a normal distribution. This confirms that the normality assumption is met.

Skewness and Kurtosis Values:

Table 7: Skewness and Kurtosis Values

Variables	Skewness	Kurtosis	Decision
Real-Time Monitoring Systems	-0.245	-0.342	Acceptable
Automated Scheduling Systems	-0.187	-0.298	Acceptable
Smart procurement Systems	-0.112	-0.201	Acceptable
Supply Chain Efficiency	-0.201	-0.289	Acceptable

Interpretation: All skewness values are within ± 2 , and all kurtosis values are within ± 1 , confirming acceptable normality (George & Mallery, 2010; Byrne, 2010).

Q-Q Plot Analysis: The Q-Q plots for all variables showed point closely following the diagonal reference line, further confirming the normality assumption.

Test for Linearity

Scatter Plot Analysis: Scatter plots between each independent variable and the dependent variable showed approximately linear relationships with no clear curved pattern.

Residual vs. Fitted Plot: The plot showed random scatter around zero with no discernible pattern, indicating that the linearity assumption is met.

Partial Regression Plots: All partial regression plots showed linear relationships between each predictor and dependent variable.

Interpretation: The linearity assumption is satisfied, indicating that the relationships between the independent variables and the dependent variable are linear.

Test for multicollinearity

Variance Inflation Factor (VIF) and Tolerance Results:

Table 8: Test for Multicollinearity

Variable	VIF	Tolerance (1/VIF)	Decision
Real-Time Monitoring System	1.845	0.542	Acceptable
Automated Scheduling Systems	1.625	0.615	Acceptable
Smart Procurements Systems	1.421	0.704	Acceptable

Interpretation: All VIF values are less than 5 (range: 1.421-1.845), indicating no serious multicollinearity. Tolerance values are all greater than 0.20 (range: 0.542-0.704), further confirming that multicollinearity is not a concern (Hair et al.,2014). The inter-correlations between independent variables (ranging from 0.512 to 0.588) are also below 0.80, confirming no serious multicollinearity.

Test for Homoscedasticity

Breuch-Pagan Test Results

Table 9: Breuch-Pagan Test Results

Statistic	Value	df	Sig. (p-value)	Decision
Lagrange Multiplier (LM)	1.824	3	0.612	Homoscedastic
F-Statistic	0.598	3, 31	0.621	Homoscedastic

Interpretation

The Breusch-Pagan test shows p-values greater than 0.05 (0.612 and 0.621), indicating that the null hypothesis of homoscedasticity (equal variance) cannot be rejected. This confirms that the variance of residuals is constant across all levels of the independent variables.

Residual vs. Fitted Plot Analysis: The residual plot showed random scatter with no funnel shape or pattern, further confirming homoscedasticity.

Test for Independence of Errors (Autocorrelation)

Table 10: Durbin-Watson Test Results

Statistic	Value	Decision
Durbin-Watson	1.974	No autocorrelation

Interpretation

The Durbin-Watson statistics of 1.974 are close to 2.0 (within the acceptable range of 1.5 to 2.5), indicating no significant autocorrelation in the residuals (Durbin & Watson, 1950). The independence of errors is met.

Autocorrelation Function (ACF) Plot: No significant spikes were observed at any lag, confirming no autocorrelation.

Test for Influential Observations (Outliers):

Table 11: Cook's Distance Results

Statistic	Value	Criterion	Decision
Maximum Cook's Distance	0.287	< 1.0	Acceptable
Mean Cook's Distance	0.124	< 1.0	Acceptable

Interpretation

The maximum Cook's Distance value (0.287) is less than 1.0, indicating that no observation has undue influence on the regression results. All Studentized residuals were within ± 3 , and leverage values were within acceptable limits.

Table 12: Summary of Diagnostic Test Results

Assumption	Test	Result	Status
Normality	Shapiro-Wilk Test	$p > 0.05$ for all variables	Met
	Skewness & Kurtosis	Within acceptable ranges	Met
Linearity	Residual vs. Fitted Plot	Random scatter	Met
	Scatter Plots	Linear patterns	Met
Multicollinearity	VIF	All < 5 (range: 1.421 - 1.845)	Met
	Tolerance	All > 0.20 (range: 0.542 - 0.704)	Met
Homoscedasticity	Breusch-Pagan Test	$p > 0.05$	Met
Independence	Durbin-Watson	1.974 (≈ 2.0)	Met
Influential Observations	Cook's Distance	Max = 0.287 (< 1.0)	Met

Overall Conclusion

All diagnostic tests confirm that the data meets the assumptions required for multiple linear regression analysis. The assumption of normality, linearity, absence of multicollinearity, homoscedasticity, independence of errors, and absence of influential observations are all satisfied. Therefore, the regression model is valid, and the results can be interpreted with confidence.

Table 13: Summary of regression assumption tests

Assumption	Test Method	Test Statistic	Result	Decision
Normality	Shapiro-Wilk	0.972 - 0.979	$p > 0.05$	Met
Normality	Skewness	-0.245 to -0.112	Within ± 2	Met
Normality	Kurtosis	-0.342 to -0.201	Within ± 7	Met
Linearity	Residual Plot	Random scatter	No pattern	Met
Multicollinearity	VIF	1.421 - 1.845	< 5.0	Met
Multicollinearity	Tolerance	0.542 - 0.704	> 0.20	Met
Homoscedasticity	Breusch-Pagan	LM = 1.824	$p > 0.05$	Met
Independence	Durbin-Watson	1.974	≈ 2.0	Met
Influential Observations	Cook's Distance	0.287 (max)	< 1.0	Met

Inferential Statistics

This section moves beyond description to explore the relationships-between variables and test the study's hypotheses, even within this context of low digitalization.

Pearson Correlation Matrix

A Pearson correlation analysis was carried out to examine the power and guidance of the linear relation between the variables. The results are presented in table 14.

Pearson Correlation Matrix

Table 14: Pearson Correlation Matrix

Variable	1	2	3	4
Real-Time Monitoring	1			
Automated Scheduling	.588**	1		
Smart Procurement	.512**	.554**	1	
Supply chain efficiency	.645**	.598**	.521**	1

**Correlation is significant at the 0.01 level (2-tailed).*

Interpretation

Despite the very low adoption levels, all three digitalization variables show a moderate, positive, and statistically significant relationship with supply chain efficiency. This is a powerful and encouraging finding.

Real-Time Monitoring shows the strongest correlation ($r=0.645$, $p<0.01$). This suggests that even the minimal, fragmented visibility tools currently in use have the most discernible impact on improving efficiency.

Automated Scheduling ($r=0.598$, $p<0.01$) and **Smart Procurement** ($r=0.521$, $p<0.01$) also show significant, moderate correlations. This indicates a clear understanding among staff that automating these manual processes would lead to substantial performance gains.

The significant inter-correlations between the independent variables also suggest that they are perceived as a cohesive digital strategy; improvement in one area is seen to be linked to improvement in another.

3.4 Qualitative Data Integration: Thematic Analysis

The quantitative findings were triangulated to understand the "why" behind the numbers, thematic analysis was conducted on semi-structured interviews with five managers. Three central themes emerged, providing a narrative for the 37.4% digitalization index.

Pervasive Reliance on Manual, Time-Consuming Processes

Respondents consistently described an operational environment dominated by physical paperwork and verbal communication.

A Warehouse Officer stated:

"Everything here is paper and phone calls. We write down inventory levels in a ledger that gets updated at the end of the day, if we have time. If we need to find a specific item for an urgent order, we have to walk through the aisles and look for it. It takes forever, and mistakes happen all the time. I've seen us lose a whole hour just looking for a misplaced pallet." This quote vividly explains the low scores for Automated Scheduling and Smart Procurement, highlighting how manual systems directly cause delays and errors.

Minimal, Ineffective, and Fragmented Technology Use

The interviews revealed that technology use was not just limited but also poorly implemented. A Transport Coordinator explained:

"We have one old GPS unit that management sometimes puts in a truck for what they call 'important deliveries.' Most of the time, we drivers just use our personal phones and call in our location if there's a big problem. There is no real-time system for the office to see where all the trucks are. It's a guessing game."

This narrative supports the low score and high standard deviation for Real-Time Monitoring. It depicts a situation of symbolic rather than strategic technology adoption.

A Culture of Operational Inertia and Fear of Change

The most profound barrier identified was not financial, but cultural. An operations Manager revealed a deep-seated resistance:

"We've been doing things this way for 10 years. We get the job done, don't we? I know there is new software, but it's expensive and seems complicated. My team is not tech-savvy, and I worry it will cause more problems than it solves in the first few months. We can't afford that downtime."

Lack of technology:

Sales marketing responded: *"A real-time system would be a gamechanger. I could proactively tell a customer their delivery is 30 minutes away instead of waiting for their angry call. I could promise more accurate delivery windows when making sales."*

Old technology:

An IT responded: *"our system is a collection of old, disconnected tools. A few standalone computers with Excel, some basic accounting software that doesn't talk to anything else, and one or two GPS units we can't get parts for. There is no central database."*

This contributes to a critical need for management changes. The fear of the learning curve and temporary disruption is preventing the company from making long-term gains, effectively locking it into its inefficient, low-digital state.

4. SUMMARY OF KEY FINDINGS

The integrated analysis of quantitative (N = 35) and qualitative (N = 5) data identified several key findings regarding digitalization and supply chain efficiency at RAM Transporters Ltd. The overall level of digitalization was low, with a digitalization index of 34.4%, while the perceived level of supply chain efficiency was also low (M = 2.10). Respondents reported challenges related to delays, operational errors, and coordination, while qualitative findings indicated continued reliance on manual processes and fragmented use of digital technologies. These findings suggest that limited digitalization and operational challenges coexist within the company, although the cross-sectional design does not establish a direct causal relationship between them. The analysis further revealed positive and statistically significant relationships between real-time data monitoring and supply chain efficiency ($r = .645, p < .01$) and between automated order processing and scheduling and supply chain efficiency ($r = .521, p < .01$).

The regression model explained 48.7% of the variance in supply chain efficiency, with real-time monitoring emerging as the only statistically significant individual predictor ($\beta = .432, p = .024$). These results identify real-time monitoring as an important area for further strengthening, while the limited levels of automation and digital procurement indicate areas where additional digital integration may be considered.

The qualitative findings highlighted several barriers to effective digitalization, particularly continued reliance on manual procedures, fragmented technology use, resistance to change, and limited digital skills. Overall, the findings indicate that RAM Transporters Ltd has considerable scope to strengthen its digital capabilities and supply chain processes. The evidence particularly points to the need for improved real-time monitoring, greater automation of order processing and scheduling, stronger digital procurement practices, staff capacity development, and effective change-management measures.

5. CONCLUSION

The study concludes that digitalization is associated with supply chain efficiency at RAM Transporters Ltd, although the overall level of digitalization remains low. Real-time data monitoring demonstrated a positive and statistically significant relationship with supply chain efficiency and emerged as the strongest individual predictor in the regression model. This finding highlights the importance of strengthening real-time visibility to support coordination, monitoring, information sharing, and operational decision-making within the company.

The findings further indicate that automated order processing and scheduling remain limited, with insufficient automation potentially constraining timely order management, scheduling, coordination, and resource utilization. Similarly, digital procurement practices remain underdeveloped, with the company continuing to rely substantially on traditional procurement procedures. Although digital procurement did not demonstrate a statistically significant relationship with supply chain efficiency in the reported analysis, the qualitative findings suggest that limited digital integration may create challenges in information coordination and procurement processes.

Generally, the study concludes that RAM Transporters Ltd has substantial scope to improve supply chain efficiency through more effective integration and utilization of digital technologies. The findings support a progressive digital transformation approach that prioritizes real-time monitoring, expands automation of core order-processing and scheduling activities, and strengthens digital procurement systems. Such efforts should be accompanied by appropriate staff training, technical support, system integration, and change-management measures to promote effective and sustainable use of digital technologies.

6. RECOMMENDATION

Based on the findings, RAM Transporters Ltd should prioritize strengthening real-time data monitoring by expanding the use of GPS-enabled fleet monitoring and accessible digital dashboards for tracking vehicle movements and shipment status. The company should also progressively automate core supply chain processes, particularly order processing and scheduling, through appropriate digital systems that support order entry, tracking, documentation, scheduling, and coordination. These measures should be accompanied by staff training and technical support to promote effective and consistent use of the technologies.

The company should also strengthen its digital procurement practices by introducing systems that facilitate electronic procurement records, supplier information management, communication, and transaction tracking. Digital procurement should be integrated with other supply chain processes to improve information flow and coordination. Overall, RAM Transporters Ltd should adopt a phased approach to digital transformation, supported by system integration, staff capacity building, technical support, and change-management measures to promote sustainable adoption and effective utilization of digital technologies.

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