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TECHNOLOGY AND TASK CHARACTERISTICS IN ELECTRONIC MEDICAL RECORD COMPLIANCE: THE MEDIATING ROLE OF SYSTEM RELIABILITY

Nurhasanah Dewi Ritonga[1]
Universitas Esa Unggul, Jakarta, Indonesia
nurhasanahdewi304@student.esaunggul.ac.id

Ellya Niken[2]
Universitas Esa Unggul, Jakarta, Indonesia
Ellya.niken@esaunggul.ac.id

Hosizah Markam[3]
Universitas Esa Unggul, Jakarta, Indonesia
hosizah@esaunggul.ac.id

Abstract

Electronic medical record (EMR) documentation must be complete, accurate, timely, and legally accountable to support patient safety and continuity of care. At Pena 98 Hospital, documentation compliance remained below the expected standard and was accompanied by workflow complexity and recurring concerns about system performance. This study examined the effects of technology characteristics and task characteristics on EMR documentation compliance, with system reliability as a mediating variable. A quantitative cross-sectional design was used. All 72 inpatient nurses who routinely used the EMR were recruited through total sampling. Data were collected with a four-point Likert questionnaire and analyzed using partial least squares structural equation modeling in SmartPLS 4.0. The measurement model met convergent validity, discriminant validity, and internal consistency criteria. Technology characteristics and task characteristics significantly predicted system reliability (Beta = 0.451, $p < 0.001$; Beta = 0.358, $p = 0.001$). Both constructs also directly affected compliance (Beta = 0.219, $p = 0.045$; Beta = 0.274, $p = 0.010$), while system reliability showed the strongest direct effect on compliance (Beta = 0.420, $p < 0.001$). Significant indirect effects were found for technology characteristics (Beta = 0.190, $p = 0.001$) and task characteristics (Beta = 0.150, $p = 0.032$), indicating

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complementary partial mediation. The model explained 63.1% of the adjusted variance in EMR documentation compliance. These findings indicate that compliance improvement should combine workflow-oriented system design with stable access, accurate data, rapid response, and uninterrupted operation, rather than relying solely on administrative enforcement.

Keywords: Electronic Medical Record, Documentation Compliance, System Reliability, Task-Technology Fit, Inpatient Nurses

INTRODUCTION

The implementation of electronic medical records is a central component of hospital digital transformation. EMRs consolidate patient identification, clinical assessment, treatment, medication, nursing intervention, and evaluation data into an integrated digital record. When the record is documented correctly, clinicians can retrieve information more quickly, coordinate care across professions, and support clinical and managerial decisions with a more complete data trail (Wager et al., 2009; Amatayakul, 2009). In Indonesia, the obligation to maintain electronic medical records also has regulatory, ethical, and accreditation implications under the Minister of Health Regulation Number 24 of 2022.

The benefits of an EMR depend on more than system availability. Healthcare workers must enter information completely, accurately, and on time. Incomplete or delayed documentation can disrupt continuity of care, increase the risk of communication errors, weaken quality monitoring, and reduce the validity of data used for reports and financing claims (Rahmatiqa et al., 2020). Documentation compliance therefore represents a practical performance outcome: the system has not succeeded merely because it is opened or used, but because users can complete required records according to professional and organizational standards.

Pena 98 Hospital has used an EMR since 2022. Internal data for October 2024 through September 2025 showed fluctuating compliance, with the lowest monthly rates recorded in December at 87.57% and January at 88.81%. None of the observed months reached the 100% documentation target. The number of files requiring correction was also substantial, averaging close to 300 files per month and reaching 502 revisions in December 2024. Preliminary findings further indicated difficulties in clinical information entry, inter-unit exchange, coding and claims, data processing, and access stability, consistent with reported documentation barriers in hospital settings (Ningsi et al., 2024). Inpatient nurses

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were selected as the study population because they document care continuously across assessment, intervention, medication, evaluation, and shift handover activities.

These problems cannot be explained adequately by user discipline alone. A system may have many functions but still be difficult to use during busy service periods. Conversely, a demanding task may remain manageable when the technology is responsive and closely aligned with the workflow. The Task-Technology Fit (TTF) perspective argues that technology contributes to performance when its capabilities match the requirements of the task (Goodhue & Thompson, 1995). In the present study, technology characteristics describe the features, functionality, and usability of the EMR, whereas task characteristics describe complexity, interdependence, time criticality, and mobility. Compliance is positioned as a performance impact because it reflects the quality and correctness of task completion, rather than the frequency of system use.

System reliability is introduced as the mechanism connecting technology and task requirements with compliant documentation. Within the DeLone and McLean information systems success model, reliability is part of system quality and reflects stable availability, freedom from errors, trustworthy data, consistent response time, and operational continuity (DeLone & McLean, 2016). A well-designed system that frequently crashes or responds slowly may not support documentation at the point of care. Likewise, complex and interdependent clinical tasks increase the need for a reliable system. The present research therefore evaluates both direct effects and mediated effects in one structural model.

The study contributes to hospital information systems research in three ways. First, it applies TTF to a specific performance outcome: compliance with EMR documentation by inpatient nurses. Second, it separates technology characteristics, task characteristics, and system reliability rather than treating system quality as a single broad construct. Third, it evaluates system reliability as a mediator, providing a clearer explanation of how technology design and work demands are translated into compliant behavior. The objective was to analyze the simultaneous, direct, and indirect relationships among these constructs at Pena 98 Hospital.

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LITERATURE REVIEW

EMR Documentation Compliance

Compliance with EMR documentation is the behavior of healthcare workers in recording services according to established standards, procedures, and legal requirements. High-quality medical records are complete, accurate, timely, and legally defensible (Huffman, 1994). In nursing documentation, this includes patient identity, assessment, nursing problems, interventions, medication and collaborative actions, patient responses, evaluation, chronological progress notes, and the use of authorized personal accounts (Stout, 2019). These components are operationally important because they support handover, multidisciplinary coordination, patient safety, and retrospective review.

The study measures compliance through seven dimensions: completeness of patient identity and administration, timeliness, accuracy of nursing assessment, completeness of nursing intervention records, documentation of patient response and evaluation, regularity of progress notes, and legal-ethical compliance. This multidimensional approach avoids reducing compliance to a single completion percentage and captures the quality of documentation behavior.

Technology Characteristics

Technology characteristics refer to the capabilities provided by an information system to support work. In TTF, the relevance of technology depends on whether its features and functions help users obtain, process, and communicate the information needed for a task (Goodhue & Thompson, 1995; Zigurs & Buckland, 1998). The construct is represented by features, functionality, and usability. Features concern the availability of appropriate documentation options; functionality concerns whether those options operate effectively and integrate information across services; usability concerns ease of learning, navigation, and routine operation.

Previous studies in health and digital service settings indicate that accessible functions, integrated information, and ease of use strengthen users' perceptions that a system can support their work (Chen & Hsiao, 2021; Riana et al., 2021; Ulapane et al., 2023; Wang et al., 2020). Technology quality can also influence performance directly by reducing unnecessary steps and making correct documentation easier. The following relationships were examined: technology characteristics positively affect system reliability and positively affect EMR documentation compliance.

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Task Characteristics

Task characteristics describe the nature and demands of the work that must be completed. Clinical documentation is information-intensive and often occurs under time pressure. It may require several steps, accurate interpretation, coordination with other professionals, and access from different locations. The study represents these demands through task complexity, task interdependence, time criticality, and mobility, consistent with TTF and healthcare technology research (Goodhue & Thompson, 1995; Trice & Treacy, 1988; Connor et al., 2013).

Task demands may encourage compliance because documentation is an integral professional obligation. At the same time, complex and interdependent tasks increase the need for a stable and responsive system. When information from laboratories, pharmacy, radiology, and other clinicians is not readily accessible, the burden of completing the record increases. Studies of EMR, mHealth, and other information systems similarly show that task requirements shape perceived fit and subsequent performance (Hua et al., 2021; Leung et al., 2024; Nisak et al., 2023). Accordingly, task characteristics were expected to positively affect system reliability and EMR documentation compliance.

System Reliability as a Mediator

System reliability is the ability of the EMR to remain available, stable, accurate, and operational when needed. Five dimensions were assessed: system availability, freedom from errors, data reliability, response-time stability, and system continuity. Reliability is not simply the absence of total downtime. It also includes successful saving, stable login, consistent access during peak workload, and confidence that displayed information is correct.

A reliable system can directly support compliance by allowing nurses to document immediately after care, retrieve accurate information, and continue records across shifts. It can also transmit the effects of technology and task characteristics. Appropriate features will have limited value when they operate inconsistently, while complex tasks become more manageable when the system is continuously available and responsive. This logic supports two mediation hypotheses: system reliability mediates the relationship between technology characteristics and compliance, and it mediates the relationship between task characteristics and compliance. Because direct and indirect paths may coexist, the analysis also assessed whether mediation was partial or full using the approach described by Nitzl et al. (2016) and Zhao et al. (2010).

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Research Hypotheses

H1: Technology characteristics, task characteristics, and system reliability simultaneously affect EMR documentation compliance.
H2: Technology characteristics positively affect system reliability.
H3: Task characteristics positively affect system reliability.
H4: Technology characteristics positively affect EMR documentation compliance.
H5: Task characteristics positively affect EMR documentation compliance.
H6: System reliability positively affects EMR documentation compliance.
H7: System reliability mediates the effect of technology characteristics on EMR documentation compliance.
H8: System reliability mediates the effect of task characteristics on EMR documentation compliance.

RESEARCH METHOD

Design, Setting, and Participants

This quantitative study used a causal cross-sectional design. Data collection was conducted at Pena 98 Hospital, Bogor Regency, West Java, from November 2025 to January 2026. The population comprised 72 inpatient nurses who used the EMR in their daily work. Because the population was limited and accessible, total sampling was applied, and all 72 nurses were included in the analysis. The design was intended to test relationships among latent variables at a defined period; it does not establish temporal causality beyond the proposed structural model.

Instrument and Measurement

Data were collected through an online questionnaire using a four-point Likert scale: 1 = strongly disagree/never, 2 = disagree/rarely, 3 = agree/often, and 4 = strongly agree/always. The instrument contained 51 indicators: nine for technology characteristics, twelve for task characteristics, fifteen for system reliability, and fifteen for EMR documentation compliance. The technology construct covered features, functionality, and usability. Task characteristics covered complexity, interdependence, time criticality, and mobility. System reliability covered availability, freedom from errors, data reliability, response-time stability, and continuity. Compliance covered seven documentation dimensions.

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The instrument was pilot-tested with 30 respondents. All items met the product-moment validity criterion of r-calculated >= 0.361. Pilot Cronbach alpha values were 0.957 for technology characteristics, 0.932 for task characteristics, 0.977 for system reliability, and 0.974 for compliance, indicating high internal consistency. The final structural analysis re-evaluated convergent validity, discriminant validity, and composite reliability.

Data Analysis

Descriptive analysis used the Three Box Method. With 72 respondents and a four-point scale, index values of 18-35 were categorized as low, 36-53 as moderate, and 54-72 as high. Inferential analysis used partial least squares structural equation modeling in SmartPLS 4.0. The reflective measurement model was assessed using outer loadings, Average Variance Extracted (AVE), Cronbach alpha, composite reliability, the Heterotrait-Monotrait ratio (HTMT), and the Fornell-Larcker criterion. The structural model was assessed using adjusted R-square, Q-square, Standardized Root Mean Square Residual (SRMR), Normed Fit Index (NFI), path coefficients, t-statistics, and p-values. A path was considered significant when $t > 1.96$ and $p < 0.05$. Specific indirect effects were used to evaluate mediation.

RESULTS AND DISCUSSION

Respondent Characteristics

All 72 questionnaires were complete and eligible for analysis. Most respondents were women, were 26-35 years old, held a diploma-level nursing qualification, and had worked for one to five years. The profile indicates that the results primarily represent early- to mid-career inpatient nurses who routinely interact with the EMR during shift-based care.

Table 1.
Respondent characteristics (n = 72)

Characteristic	Category	n	%
Sex	Male	7	9.7
	Female	65	90.3
Age	<25 years	18	25.0
	26-35 years	38	52.8

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Characteristic	Category	n	%
	36-45 years	13	18.1
	>45 years	3	4.2
Education	Diploma III	48	66.7
	Diploma IV	1	1.4
	Professional nursing	23	31.9
Tenure	<1 year	14	19.4
	1-5 years	49	68.1
	>5 years	9	12.5

Descriptive Findings

All four constructs were in the moderate index category. Task characteristics obtained the highest overall index (51.13), reflecting substantial interdependence, time pressure, and mobility in inpatient documentation. Compliance had an overall index of 45.07. The highest compliance dimension was documentation of patient response and evaluation (47.50), while regularity of progress notes was the lowest (42.13). The lowest technology dimension was functionality (43.00). The lowest reliability dimension was system continuity (39.08), followed by data reliability (40.25) and response-time stability (40.75). These patterns indicate that the main operational weaknesses were not the absence of EMR use, but continuity, response speed, trust in displayed data, and chronological documentation across shifts.

Table 2.
Descriptive summary of study constructs

Construct	Overall index	Category	Highest dimension	Lowest dimension
Technology characteristics	43.22	Moderate	Features: 43.58	Functionality: 43.00
Task characteristics	51.13	Moderate	Task interdependence: 52.83	Task complexity: 48.75

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Construct	Overall index	Category	Highest dimension	Lowest dimension
System reliability	42.27	Moderate	System availability: 46.17	System continuity: 39.08
EMR documentation compliance	45.07	Moderate	Response and evaluation: 47.50	Regularity of progress notes: 42.13

Table 3.
Item-level distribution for EMR documentation compliance

No.	Indicator	STS	TS	S	SS	Index	Category
1	Patient identity completed before nursing care	14	21	13	24	47.75	Moderate
2	Administrative data match the patient's actual identity	18	24	13	17	43.25	Moderate
3	EMR completed immediately after nursing care	12	21	14	25	49.00	Moderate
4	Documentation is not delayed during high workload	19	14	22	17	45.25	Moderate
5	Nursing assessment reflects the patient's actual condition	19	14	15	24	47.00	Moderate
6	Assessment entries are clear and understandable	19	21	18	14	42.75	Moderate
7	All nursing actions are documented in the EMR	17	19	14	22	46.25	Moderate
8	Medication and collaborative procedures are fully recorded	22	20	8	22	43.50	Moderate
9	Patient responses to nursing actions are documented	11	22	15	24	49.00	Moderate
10	Patient evaluation results are fully documented	16	17	22	17	46.00	Moderate
11	Progress notes are entered chronologically	20	16	17	19	44.75	Moderate
12	Progress notes support continuity between shifts	28	16	14	14	39.50	Moderate

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No.	Indicator	STS	TS	S	SS	Index	Category
13	The nurse uses only their own EMR account	18	25	12	17	43.00	Moderate
14	Date and time are included in every entry	21	20	13	18	43.00	Moderate
15	Patient confidentiality is maintained during access and entry	13	27	17	15	44.50	Moderate

Table 4.
Item-level distribution for technology characteristics

No.	Indicator	STS	TS	S	SS	Index	Category
1	EMR features support examination and treatment documentation	16	20	13	23	46.75	Moderate
2	The EMR provides complete features for all record sections	24	21	11	16	40.75	Moderate
3	Available features match the unit workflow	23	17	12	20	43.25	Moderate
4	EMR functions facilitate patient-data documentation	24	15	15	18	42.75	Moderate
5	The EMR connects information across laboratory, pharmacy, and radiology	19	25	12	16	42.25	Moderate
6	The EMR functions without frequent errors	19	23	9	21	44.00	Moderate
7	Menus and displays are easy to understand during data entry	25	15	15	17	42.00	Moderate
8	The EMR is easy to use for routine documentation	23	14	15	20	44.00	Moderate
9	The nurse can learn to use the EMR without difficulty	20	18	19	15	43.25	Moderate

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Table 5. Item-level distribution for task characteristics

No.	Indicator	STS	TS	S	SS	Index	Category
1	Medical documentation requires complex and detailed information	14	19	13	26	48.75	Moderate
2	EMR documentation requires many steps and procedures	14	20	11	27	48.75	Moderate
3	EMR entry requires high accuracy to prevent data errors	17	13	16	26	48.75	Moderate
4	Task completion depends on information from other units	16	9	18	29	51.00	Moderate
5	Coordination with other professions is required to complete the EMR	17	14	17	24	48.00	Moderate
6	Documentation is linked to clinical actions by other professionals	8	8	10	46	59.50	High
7	Timely EMR entry is required for smooth service delivery	10	17	16	29	52.00	Moderate
8	Many clinical actions require immediate EMR entry	13	10	22	27	51.75	Moderate
9	Documentation speed affects clinical decision-making	16	11	9	36	52.25	Moderate
10	Frequent movement requires easily accessible EMR	13	6	21	32	54.00	High
11	Rapid EMR access is needed while serving patients in different units	19	18	13	22	45.50	Moderate
12	Work mobility requires a flexible EMR for documentation	7	17	20	28	53.25	Moderate

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Table 6. Item-level distribution for system reliability

No.	Indicator	STS	TS	S	SS	Index	Category
1	The EMR is accessible whenever needed for work	16	19	21	16	45.25	Moderate
2	Login and access problems are rarely experienced	19	18	14	21	45.25	Moderate
3	The EMR remains available during patient-service hours	14	18	18	22	48.00	Moderate
4	Error messages do not interrupt work	22	16	17	17	43.25	Moderate
5	The EMR does not stop unexpectedly during data entry	16	27	11	18	43.75	Moderate
6	Data input and saving operate without failure	12	22	15	23	48.25	Moderate
7	Stored patient data reflect the actual condition	26	18	15	13	39.75	Moderate
8	Entered data do not change or disappear	21	18	20	13	42.25	Moderate
9	Displayed EMR information is considered accurate	26	19	17	10	38.75	Moderate
10	Login, menus, and saving respond without long waits	30	16	11	15	38.75	Moderate
11	System speed remains stable during busy hours	24	17	15	16	41.75	Moderate
12	No disruptive lag occurs when changing menus or saving	21	21	16	14	41.75	Moderate
13	The EMR rarely experiences sudden outages	27	19	14	12	38.75	Moderate
14	The EMR remains usable during high service workload	26	19	14	13	39.50	Moderate
15	The EMR operates stably throughout the work shift	25	19	19	9	39.00	Moderate

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Measurement Model

The measurement model satisfied the predefined criteria. All outer loadings ranged from 0.735 to 0.914, exceeding the ideal threshold of 0.70. AVE values ranged from 0.620 to 0.743, indicating that each construct explained more than half of its indicator variance. Cronbach alpha and composite reliability values were above 0.90. The highest HTMT value was 0.762, below the 0.90 threshold, and each square root of AVE exceeded the corresponding inter-construct correlations in the Fornell-Larcker matrix. The constructs were therefore treated as empirically distinct and internally consistent.

Table 7.
Measurement model quality

Construct	Loading range	AVE	Cronbach alpha	Composite reliability
Technology characteristics	0.740-0.914	0.743	0.956	0.959
Task characteristics	0.735-0.827	0.620	0.944	0.946
System reliability	0.805-0.886	0.724	0.973	0.973
EMR documentation compliance	0.755-0.889	0.713	0.971	0.972

Structural Model and Hypothesis Testing

Technology characteristics and task characteristics explained 52.1% of the adjusted variance in system reliability. Technology characteristics, task characteristics, and system reliability explained 63.1% of the adjusted variance in EMR documentation compliance. Q-square values were 0.378 for system reliability and 0.450 for compliance, indicating moderate predictive relevance. The SRMR value of 0.061 met the criterion for good residual fit, while the NFI value of 0.640 indicated a moderate comparative fit. The simultaneous test produced F = 38.76, exceeding the critical value of 2.74; H1 was accepted.

Table 8.
Structural model quality

Endogenous construct	R-square	Adjusted R-square	Q-square
System reliability	0.534	0.521	0.378
EMR documentation compliance	0.646	0.631	0.450

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All direct hypotheses were significant. Technology characteristics had a stronger effect on system reliability than task characteristics. Among the direct predictors of compliance, system reliability had the largest coefficient (Beta = 0.420), followed by task characteristics (Beta = 0.274) and technology characteristics (Beta = 0.219). This establishes system reliability as the most influential direct determinant within the tested model.

Table 9.
Direct effects

Hypothesis	Path	Beta	t	p	Decision
H2	Technology characteristics -> System reliability	0.451	4.310	<0.001	Accepted
H3	Task characteristics -> System reliability	0.358	3.417	0.001	Accepted
H4	Technology characteristics -> EMR compliance	0.219	2.007	0.045	Accepted
H5	Task characteristics -> EMR compliance	0.274	2.586	0.010	Accepted
H6	System reliability -> EMR compliance	0.420	3.677	<0.001	Accepted

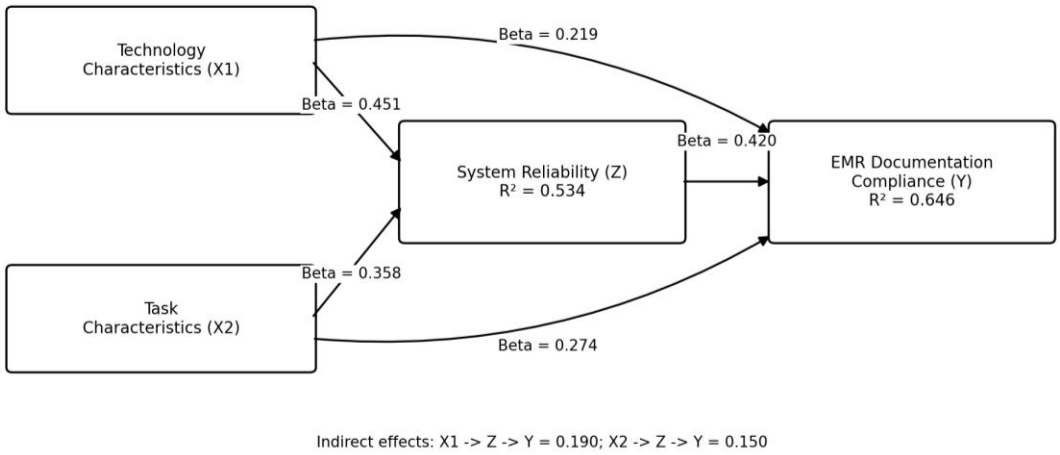
Both specific indirect effects were significant. Because the corresponding direct effects remained significant and the direct and indirect coefficients had the same positive direction, system reliability was classified as a complementary partial mediator. It explains part, but not all, of the mechanism through which technology and task characteristics influence compliance.

Table 10. Indirect effects and mediation

Hypothesis	Indirect path	Beta	t	p	Mediation
H7	Technology characteristics -> System reliability -> EMR compliance	0.190	3.211	0.001	Complementary partial
H8	Task characteristics -> System reliability -> EMR compliance	0.150	2.151	0.032	Complementary partial

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Figure 1.
Final structural model and standardized path coefficients



Discussion

Technology and Task Characteristics as Antecedents of Reliability

The results show that technology characteristics significantly influenced system reliability. This relationship is theoretically consistent with TTF: users are more likely to perceive a system as dependable when its features, operational functions, and interface support the work that must be completed. At Pena 98 Hospital, the lowest technology dimension was functionality. The finding suggests that the EMR was generally useful but did not yet provide optimal cross-unit integration, smooth data entry, and workflow support. This distinction is important. Reliability is not determined only by infrastructure; it is also shaped by how the software behaves during real clinical work. A technically active system may still be experienced as unreliable when menus do not align with documentation sequences or when information must be entered repeatedly.

The path from task characteristics to system reliability was also significant. Inpatient documentation is highly interdependent: nurses rely on laboratory results, medication information, physician instructions, and previous shift entries. The highest task dimension was interdependence, and mobility was also prominent. As tasks become more complex and time-sensitive, users require a system that is available at the point of care, provides current information, and saves data without failure. This supports previous research showing that the effectiveness of digital health tools depends on alignment with the specific demands of healthcare work (Chen & Hsiao, 2021; Leung et al., 2024; Riana et al., 2021).

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The two antecedent paths were not identical. Technology characteristics had the larger coefficient for reliability, indicating that the design and operation of the EMR were more influential than task demands in shaping reliability perceptions. However, the significant task path confirms that reliability cannot be evaluated in isolation from context. A response time that seems acceptable during low activity may become inadequate during medication rounds, admissions, or shift handovers. Reliability targets should therefore be based on workload scenarios and clinical workflows, not only on general technical uptime.

Direct Determinants of EMR Documentation Compliance

Technology characteristics directly affected compliance, although the coefficient was smaller than the effects of task characteristics and system reliability. This indicates that appropriate features and usability make compliant behavior easier but do not guarantee it. Users may still delay documentation when the system is slow, when data are not trusted, or when clinical workload takes priority. The finding is consistent with TTF research showing that useful technology contributes to performance when it can be applied effectively to the task (Goodhue & Thompson, 1995; Zaidi et al., 2020).

Task characteristics also directly affected compliance. The positive direction should not be interpreted to mean that greater complexity is always desirable. Rather, the formal, interdependent, and time-critical nature of clinical documentation makes compliance an essential part of task completion. Nurses must document because other professionals and subsequent shifts depend on the information. At the same time, the moderate task-complexity score indicates that unnecessary steps may still create burden. Hospitals should preserve clinically necessary detail while eliminating redundant or poorly sequenced entries.

System reliability had the strongest direct effect on compliance. The finding is supported by the descriptive results: system continuity, confidence in data accuracy, and response-time stability were among the lowest areas. When a system becomes unavailable or slow, users cannot reliably record information at the time of care. Delayed entry then increases the risk of missing details, fragmented progress notes, and incomplete handover information. A reliable system, by contrast, allows documentation to become part of the clinical workflow rather than an additional task completed later.

This result also clarifies the practical meaning of compliance as a performance impact. Administrative reminders and sanctions may influence behavior, but they cannot compensate fully for technical barriers. The strongest direct predictor in the model was not a policy variable; it was the system's ability to support

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continuous work. Compliance programs should therefore combine governance with system engineering, workflow redesign, and user support.

Mediating Role of System Reliability

The significant indirect effect from technology characteristics to compliance demonstrates that part of the benefit of better technology is realized through greater reliability. Features and usability improve compliance directly, while stable operation, accurate data, and fast response provide an additional pathway. The direct effect remained significant after the mediator was included, so reliability did not replace the role of technology characteristics. The pattern is complementary partial mediation: both pathways operate in the same positive direction.

The same mediation pattern was found for task characteristics. Complex and interdependent tasks can directly encourage documentation because compliance is necessary for coordination. However, those tasks are performed more consistently when the EMR is dependable. Reliability therefore functions as an operational bridge: it converts task demands into documentation that can be completed at the required time and quality. Because the direct effect remained significant, other mechanisms are also likely to be involved, including professional responsibility, supervision, organizational culture, workload allocation, and training.

The mediated findings extend a simple TTF interpretation. Technology-task alignment is not a static property of feature lists. It is experienced during use through availability, response speed, data integrity, and continuity. Two systems may offer the same formal functions but produce different compliance outcomes if one is more stable during peak workload. Likewise, the same system may be adequate in one unit and inadequate in another because the task profile differs. This reinforces the need for unit-specific performance monitoring and iterative system improvement, as also emphasized in broader reviews of healthcare technology fit (Thanthrige & Wickramasinghe, 2025).

Managerial Implications

The results identify four priorities for Pena 98 Hospital. First, the functionality of the nursing documentation module should be reviewed against the actual sequence of assessment, diagnosis, intervention, medication, evaluation, and progress-note entry. Repeated entry and poorly integrated data fields should be reduced. Second, access should be positioned closer to the point of care through adequate devices, stable connectivity, simple authentication, and rapid opening

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of patient records. Third, the hospital should strengthen validation rules and inter-unit data consistency so nurses can trust the information displayed. Fourth, system continuity should be managed as a clinical service requirement, with monitoring of downtime, failed saves, response times, and performance during peak hours.

The lowest compliance dimension was the regularity of patient progress notes. Improvement should therefore focus on chronological documentation and continuity across shifts. The EMR can support this through structured handover fields, visible time stamps, clear identification of the documenting nurse, prompts for unresolved care plans, and concise display of the latest patient condition, intervention, response, and follow-up plan. These changes should be accompanied by periodic audit and feedback based on actual system records rather than self-report alone.

From a governance perspective, compliance indicators should be linked with technical indicators. A monthly dashboard could pair documentation completeness and timeliness with system availability, median response time, failed-save rates, and help-desk incidents. This would help management distinguish whether a decline in compliance is primarily behavioral, procedural, or technical. Corrective action could then be targeted more precisely.

Limitations

The study was conducted in one hospital and included only inpatient nurses, which limits generalization to other professional groups and facilities. The cross-sectional design captures relationships at one period and does not establish temporal causation. Compliance was measured through respondent perceptions and was not verified through a direct audit of EMR timestamps, completeness, and accuracy. The model also did not include potentially relevant factors such as organizational support, training, digital literacy, workload, management policy, or safety culture. Finally, univariate and multivariate outlier screening was not examined in depth; future studies should evaluate standardized scores, boxplots, and Mahalanobis distance before final model estimation.

CONCLUSION

Technology characteristics, task characteristics, and system reliability jointly explained a substantial proportion of EMR documentation compliance among inpatient nurses at Pena 98 Hospital. Each direct relationship was significant, and system reliability was the strongest direct predictor. Reliability also partially

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mediated the effects of technology and task characteristics, confirming that system stability, data trustworthiness, response speed, and continuity are central mechanisms through which technology and work demands influence compliant documentation.

The hospital should prioritize four integrated actions: refine nursing-documentation functionality and remove redundant steps; improve point-of-care access and peak-hour performance; strengthen data validation and inter-unit consistency; and redesign progress-note and handover workflows to support chronological documentation across shifts. Future research should combine questionnaire data with objective EMR audits, include additional organizational and workload variables, examine other professional groups, and use longitudinal or mixed-method designs to clarify how reliability and compliance change after system improvement.

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