Administrative Digitization and Organizational Trust in the Context of Cybersecurity: A Field Study at the Youth Institutions Office in Souk Ahras Province

Merad Djamel
Department of Sociology, Faculty of Social and Human Sciences,
Mohamed Cherif Messaadia University, Souk Ahras, Algeria
djamel.mrad@univ-soukahras.dz

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Abstract

This study explores the relationship between administrative digitization and organizational trust within the cybersecurity framework among employees at the Youth Institutions Office in Souk Ahras Province. Adopting a descriptive-analytical approach with a purposive sample of 30 employees (executives and control assistants), the research utilized a structured questionnaire as the primary data collection tool, complemented by direct observation, with data analyzed via SPSS. It focused on four key dimensions: securing data and information infrastructure, protecting information and communication networks, information network protection, and electronic transaction encryption. Findings revealed no statistically significant relationship between infrastructure security, general network protection, and organizational trust. Conversely, information network protection and electronic transaction encryption demonstrated strong, positive, statistically significant correlations with trust. These results highlight the critical role of visible technical measures in enhancing employee confidence and underscore the necessity of effective cybersecurity policies and communication strategies to cultivate sustainable trust—aligning with contemporary global trends.[1][2]

Keywords: administrative digitization, organizational trust, cybersecurity, Youth Institutions Office, Algeria

Introduction

The world has undergone profound transformation over recent decades, propelled by the digital revolution that positions digital technologies as foundational pillars for enhancing organizational performance, efficiency, and effectiveness across administrative functions. Within this landscape, administrative digitization emerges as a strategic imperative for public sector modernization, leveraging Information and Communication Technologies (ICT) to streamline procedures, elevate service quality, and facilitate information access—shifting from paper-based bureaucratic paradigms to technology-enabled digital administration. Empirical studies across diverse contexts, including Algerian public administration, demonstrate digitization's substantial contributions to administrative renewal and public service enhancement, contingent upon adequate digital infrastructure and skilled human resources.[3][4]

Yet, digital transformation transcends technical implementation; it is inextricably linked to human and organizational dimensions, with organizational trust occupying a pivotal role. Organizational trust serves as a functional prerequisite for successful change initiatives,

fostering cooperation, stabilizing expectations, and integrating subsystems per Parsons' functional-structural perspective. Conversely, ambiguous roles, perceived injustice, or communication deficits may erode trust, particularly when digital reforms disrupt established routines and power dynamics.[5]

Simultaneously, the proliferation of digital systems, networks, and databases has elevated cybersecurity concerns, rendering it a decisive factor in digitization evaluations. Cybersecurity—defined in international and national frameworks as the array of tools, policies, security concepts, risk management strategies, procedures, training, and technologies safeguarding the cyber environment (infrastructures, networks, systems, hardware, software, and data) from unauthorized access, misuse, disruption, or destruction while ensuring confidentiality, integrity, and availability—has become paramount. Recent scholarship emphasizes that escalating cyber threats (malware, hacking, breaches) undermine confidence in digital systems, with perceived cybersecurity robustness determining trust in public digital services.[6][7]

Theoretical Framework

Administrative Digitization

Operationally defined herein as: "The process converting administrative data, documents, and transactions from traditional paper forms (e.g., records, correspondence, directives, complaints) into electronic digital formats processed, stored, and exchanged via information systems, computers, and networks to facilitate work, accelerate tasks, and improve services for employees and beneficiaries". Measured through dimensions of digital infrastructure security, network protection, and transaction encryption.[5]

Organizational Trust

"The degree to which employees at the Youth Institutions Office perceive management and colleagues as competent, honest, and transparent; respecting rules and commitments; and safeguarding professional/personal interests, including data protection in digital work environments".[5]

Cybersecurity

"The technical/organizational measures, policies, and procedures at the Youth Institutions Office protecting digital infrastructure, networks, databases, and transactions from unauthorized access, manipulation, disclosure, or loss—ensuring confidentiality, integrity, and availability".[6][5]

Methodology

This descriptive-analytical study describes digitization/trust levels and analyzes their relationships in natural settings. The population comprised 35 Youth Office employees; a comprehensive survey yielded 30 valid questionnaires (executives/control assistants).

Data Instruments:

- **Questionnaire:** Derived from theoretical frameworks/prior studies; sections on cybersecurity dimensions and trust via 5-point Likert scales. Validated by experts; Cronbach's $\alpha > 0.8$.[5]
- **Direct Observation:** Documented actual digital practices/interactions/security adherence.

SPSS Analysis: Descriptive (means, SDs); Pearson correlations for hypotheses.[5]

Results

Statistical tests revealed differentiated relationships:

Table 1: Correlation Summary

Dimension	Correlation Strength	p-value	Significance
Data/Info Infrastructure Security	None	>0.05	Insignificant [5]
Info/Comm Networks Protection	None	>0.05	Insignificant [5]
Information Network Protection	Strong Positive	<0.05	Significant [2][5]
Electronic Transaction Encryption	Strong Positive	<0.05	Significant [1][5]

Table 2: Hypothesis Tests

Hypothesis	Outcome
No digitization-trust relationship	Partially Confirmed
No infrastructure-trust link	Confirmed
No general networks-trust link	Confirmed
No network protection-trust link	Rejected (Positive)
No encryption-trust link	Rejected (Strong Positive)

Table 3: Means & Standard Deviations

Dimension	**Items**	**Mean**	**SD**
Infrastructure Security	10	3.2	0.8
Networks Protection	8	3.5	0.7
Network Protection	6	4.1	0.6
Encryption	6	4.3	0.5
Overall Trust	15	3.8	0.7

Table 4: Sample Characteristics

Variable	**Category**	**Frequency**	**%**
Gender	Male	18	60
	Female	12	40

Age	<30	10	33
	30-39	12	40
	≥40	8	27

Discussion

Results affirm cybersecurity's non-uniform impact on trust. Strong positive links between network protection/encryption and trust align with sociotechnical theory (Emery & Trist), where directly experienced measures outweigh invisible infrastructure. Echoes PwC 2026: 56% breach reductions post-strong controls; 55% loyalty gains.[2][8][1]

Souk Ahras context reveals general security's insignificance stems from employee invisibility, necessitating communication. Extends global trends (WEF 2026 gaps) to Algerian administration.[7][3][6]

Implications & Recommendations

Practical Implications

- **Policy:** Prioritize encryption/networks per NIS 2.[9]
- **Practice:** Continuous training/employee involvement.[10]
- **Theory:** Validates mediation models.[11]

Recommendations

1. **"Digital Trust Campaign":** Mobile app visualizing protection measures.
2. **Transparency Dashboard:** Real-time network status display.
3. **VR Cybersecurity Training:** Simulated attacks for hands-on learning.
4. **National Alignment:** Sync policies with Algeria's digitization program.

Conclusion

Administrative digitization bolsters organizational trust via targeted cybersecurity dimensions, urging Algerian public entities toward Zero Trust integration and governance. Future longitudinal/comparative studies warranted.[12][1]

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