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Embedding Digital Regulatory Infrastructure in Morocco: Institutional and Technical Conditions Associated with Perceived Usefulness.

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Abstract

Purpose and objective: This study examines the post-adoption acceptance of SIGAM, the information system of Morocco's nuclear and radiological regulatory authority, to determine how technological, social, organizational, and security-related conditions are associated with perceived usefulness and continuance intention. **Methodological approach:** The study adopts a quantitative, explanatory, and cross-sectional design and uses partial least squares structural equation modeling (PLS-SEM). **Sample:** Data were obtained from a survey of 200 existing SIGAM users, including 40 internal and 160 external users. **Main findings:** Perceived ease of use, social influence, facilitating conditions, and trust and perceived security were positively associated with perceived usefulness, whereas organizational support produced a counter-theoretical negative coefficient. Perceived usefulness was strongly associated with continuance intention, and the indirect associations were consistent with mediation. **Main conclusion:** Perceived usefulness emerges as an institutionally embedded translation mechanism linking technical and institutional conditions to continuance intention within an asymmetric regulator-operator relationship. **Limitations:** The study does not establish effects on actual continued use, regulatory performance, safety outcomes, or public value; discriminant-validity and common-method concerns require cautious interpretation.

Keywords

developing countries; digital government; information systems continuance; Morocco; public regulatory information systems; technology acceptance

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1. Introduction

Information systems (IS) are central to public-sector modernization in developing countries, but their developmental value cannot be inferred from technical deployment alone. Digital systems become consequential when they are appropriated by users, embedded in institutional routines, and translated into more accessible, reliable, and accountable public action. Research on IS in developing countries therefore cautions against treating context as a passive backdrop. Institutional capacity, professional practices, resource constraints, and relations among stakeholders shape both the meaning and the outcomes of technology use (Avgerou, 2008; Heeks, 2002; Ramadani & Almaarif, 2022).

This contextual perspective is especially important for public regulatory authorities. Their information systems support authorization, oversight, inspection, monitoring, and information-exchange processes in which errors or weak traceability may carry legal, organizational, and public-safety consequences. Users may also have limited discretion to avoid the official channel. Acceptance in this setting is therefore not equivalent to voluntary consumer adoption: continued use reflects a combination of functional value, institutional legitimacy, compliance expectations, available capabilities, and confidence in the organization that operates the system.

Technology-acceptance research offers established explanations of individual use. The Technology Acceptance Model (TAM) emphasizes perceived usefulness and perceived ease of use (Davis, 1989), while the Unified Theory of Acceptance and Use of Technology (UTAUT) adds social influence and facilitating conditions (Venkatesh et al., 2003, 2016). The Technology-Organization-Environment (TOE) framework highlights organizational and environmental conditions (Tornatzky & Fleischer, 1990), and research on trust and IS continuance explains why users sustain their engagement after initial adoption (Bhattacherjee, 2001; Carter & Bélanger, 2005). However, applying these constructs as universal predictors risks obscuring how their meaning is reconfigured by developing-country institutions and by the regulatory nature of the system.

Recent studies of information systems in developing countries reinforce the need for such contextualization. Public IS adoption has been shown to depend on interoperability, workload, civil-society and vendor roles, institutional pressures, and users' ability to convert a digital artifact's possibilities into effective action (Dini et al., 2023; Kaunda et al., 2025; Sihotang et al., 2023).

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These findings shift attention from a technology-first explanation toward the interaction between the IS artifact, organizational arrangements, stakeholders, and local institutions.

Morocco provides a relevant setting in which to examine this interaction. The Moroccan Agency for Nuclear and Radiological Safety and Security (AMSSNuR), established under Law No. 142-12, regulates activities involving sources of ionizing radiation (Royaume du Maroc, 2014). AMSSNuR deployed SIGAM as an integrated system for its core regulatory activities, including the submission and monitoring of authorization applications and the traceability of exchanges with regulated operators. The system was opened to external users in October 2023. This recent rollout creates a post-adoption setting in which technical availability coexists with an ongoing process of institutionalization and user appropriation.

Regulatory information systems remain less studied than citizen-facing e-government services, health information systems, and commercial platforms. The gap is particularly visible in African and other developing-country contexts, where digital transformation must often strengthen administrative capacity while accommodating heterogeneous users and uneven resources. It is therefore important to understand not simply whether users intend to use a regulatory system, but how technological, social, organizational, and security conditions become translated into perceived value and continued use.

This research focuses on the post-adoption acceptance of SIGAM by its internal and external users. Its objective is to identify the technological, social, organizational, and security-related factors associated with perceived usefulness and to examine the mediating role of perceived usefulness in the relationships between these factors and continuance intention. The research question is formulated as follows:

Which technological, social, organizational, and security-related factors are associated with post-adoption acceptance of SIGAM among internal and external users in Morocco's public regulatory context?

The empirical analysis uses survey data from 200 SIGAM users, comprising 40 internal users and 160 external users, and applies partial least squares structural equation modeling (PLS-SEM). The results identify perceived usefulness as the principal mechanism linking perceived ease of use, social influence, facilitating conditions, and trust and perceived security to continuance intention.

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The organizational-support coefficient is negative and statistically sensitive, while high construct overlap requires cautious interpretation.

The study makes three contributions. First, it extends post-adoption research to a specialized public regulatory IS in an African developing-country context. Second, it contextualizes perceived usefulness as a combination of instrumental value and institutionally legitimated compliance value, rather than treating it as a purely individual assessment. Third, it identifies implementation priorities for public authorities seeking to sustain digital use through the alignment of system design, user capabilities, organizational arrangements, trust, and regulatory practice. The aim is analytic generalization to comparable settings, not statistical generalization beyond the studied case.

The article is structured as follows. Section 2 reviews the literature and develops the contextualized theoretical framework. Section 3 presents the institutional setting; Section 4 sets out the model and hypotheses; Section 5 describes the methodology; Section 6 reports the findings; Sections 7 and 8 discuss the findings and their implications; finally, Sections 9 and 10 present the limitations, future research directions, and conclusion.

2. Literature Review and Contextualized Theoretical Framework

This section develops the study's theoretical framework by drawing on the literature on public-sector digital transformation, technology acceptance, and regulatory information systems. Its purpose is not to juxtapose multiple models, but to construct an integrated perspective on user acceptance of SIGAM. The TAM explains the central role of perceived usefulness; the UTAUT incorporates social influence and facilitating conditions; the TOE framework accounts for organizational support and the institutional context; finally, research on trust and information systems continuance enables the model to be adapted to the specific characteristics of public-sector regulatory information systems.

2.1 Information Systems, Development, and Digital Government

Research on information systems in developing countries (ISDC) examines how digital artifacts interact with the institutional, economic, organizational, and cultural conditions in which they are introduced. A central lesson is that the same technology may produce different practices and outcomes across contexts because implementation is mediated by local capabilities, interests, rules,

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infrastructures, and histories (Avgerou, 2008; Heeks, 2002). Context is therefore explanatory rather than merely descriptive.

This insight is directly relevant to digital government. Public-sector digitalization is often justified by expected gains in efficiency, transparency, coordination, and service quality, yet these gains depend on the capacity of organizations and users to integrate the system into everyday work. Digital transformation involves changes in procedures, roles, information flows, and accountability arrangements, not only the digitization of existing forms (Cordella & Tempini, 2015; Gil-Garcia, 2012; Mergel et al., 2019). In developing-country settings, uneven digital skills, fragmented infrastructure, institutional complexity, and dependency on external actors can further condition these changes. In particular, a recent study conducted in South Africa shows that the design of accessible e-government services depends on organizational structures and stakeholder support mechanisms (Abdurahman & Kabanda, 2024).

Ramadani and Almaarif (2022) argue that developing-country scholarship gains explanatory value when local conditions are incorporated into theorization rather than appended as background. Applied to user acceptance, this means that perceived ease of use, social influence, facilitating conditions, organizational support, and trust should not be assumed to have invariant meanings. Social influence may express institutional authority; facilitating conditions may capture unequal access to assistance and skills; and trust may concern both the technical artifact and the public organization operating it.

The present study adopts this contextualized position. It uses established acceptance constructs to enable cumulative analysis, while interpreting their relationships through the characteristics of a recently deployed Moroccan regulatory system. The development relevance lies in the system's potential to strengthen public regulatory capacity, procedural traceability, and access to administrative processes, provided that users can convert its technical possibilities into sustained and effective use.

2.2 Public Regulatory Information Systems as Contextually Embedded Artifacts

A regulatory information system supports the exercise of public authority. It organizes regulated procedures, records evidence, enables oversight, and structures exchanges among regulators, professionals, operators, and other stakeholders. Unlike a discretionary consumer platform, it is

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embedded in formal mandates and compliance relationships. Its acceptance must consequently be understood at the intersection of individual perceptions and institutional requirements.

The IS artifact is not limited to software features. It includes the functions made possible by the technology and the way actors perceive, enact, and adapt those possibilities. Dini et al. (2023) show that the development contribution of an IS artifact depends on whether actors can convert possibilities into actions and valued results. In a regulatory setting, this conversion is shaped by professional competence, digital literacy, access to support, procedural clarity, and the alignment between system workflows and legal obligations.

Multi-actor dependence further distinguishes regulatory IS. Evidence from developing-country public systems highlights the influence of interoperability, workload, vendors, institutional pressures, and stakeholder coordination on implementation and use (Binamungu & Kimaro, 2025; Kaunda et al., 2025; Sihotang et al., 2023). A technically operational system may therefore remain difficult to appropriate when assistance is uneven, procedures are poorly aligned, or users are uncertain about data protection and institutional responsibility.

These features also change the interpretation of usefulness. For SIGAM users, usefulness may include speed and convenience, but also traceability, compliance assurance, visibility of application status, and the ability to interact with the regulator through a recognized channel. The system's functional value is thus intertwined with its institutional legitimacy. This makes a public regulatory IS a theoretically relevant setting for studying how acceptance is sustained after rollout.

Prior research examined SIGAM through regulation theory and the resilience of health governance (Hmamouch et al., 2026). The present article is empirically and theoretically distinct: it analyzes a user survey, tests post-adoption acceptance relationships, and focuses on how technical and institutional conditions are associated with perceived usefulness and intended continuation. It does not reuse the earlier article's governance analysis as empirical evidence.

2.3 Perceived Usefulness and Perceived Ease of Use in the Technology Acceptance Model

The Technology Acceptance Model is one of the most widely used theoretical frameworks for explaining the acceptance of information technologies. Introduced by Davis (1989), it is primarily based on two determinants: perceived usefulness and perceived ease of use.

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Perceived usefulness refers to the extent to which users believe that a system enhances their performance in carrying out their tasks. In an organizational context, this construct plays a central role, as users are more likely to accept a technology when they perceive that it saves time, reduces effort, improves the quality of their work, or simplifies procedures (Davis, 1989; Venkatesh & Davis, 2000).

Perceived ease of use refers to the extent to which users consider a system easy to understand, learn, and use. A system perceived as complex may hinder user appropriation, even when it offers functional benefits. Conversely, an intuitive interface, clearly defined features, and understandable procedures may enhance perceived usefulness and facilitate adoption.

In this study, perceived usefulness is positioned as the pivotal construct in the model. This choice is justified by the fact that SIGAM is examined at the post-deployment stage: users are no longer merely discovering the system but are evaluating its actual capacity to support their regulatory procedures and tasks. Perceived usefulness therefore captures the functional value attributed to the system following an initial experience of use.

2.4 Social Influence and Facilitating Conditions in UTAUT

The Unified Theory of Acceptance and Use of Technology extends earlier technology acceptance models by incorporating several behavioral, social, and organizational dimensions. It remains widely applied and discussed in recent research on digital technology adoption (Dwivedi et al., 2019; Venkatesh et al., 2003, 2016). Venkatesh et al. (2003) identify four main determinants of behavioral intention and actual use: performance expectancy, effort expectancy, social influence, and facilitating conditions.

Social influence refers to users' perceptions that people who are important to them believe they should use the system. In public organizations, this dimension is particularly important because usage practices may be shaped by managerial guidance, professional norms, or administrative requirements.

Facilitating conditions refer to the availability of the technical, organizational, and human resources required for effective system use. These include access to appropriate digital infrastructure, the availability of technical assistance, user training, procedural clarity, and the quality of support.

In a regulatory context, social influence is not limited to the views of colleagues or supervisors; it also reflects the process through which the system acquires institutional legitimacy. When a system

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such as SIGAM gradually becomes the expected channel for submitting or processing regulatory applications, its use takes on a normative dimension. Facilitating conditions then become essential for translating this institutional prescription into effective user appropriation.

2.5 Organizational Support and the TOE Contextual Lens

The Technology–Organization–Environment (TOE) framework provides a basis for analyzing the adoption of technological innovations at the organizational level. Proposed by Tornatzky and Fleischer (1990), it posits that technology adoption depends on three dimensions: technological, organizational, and environmental (Tornatzky & Fleischer, 1990).

The technological dimension concerns the characteristics of the technology itself, including its complexity, compatibility with existing systems, perceived advantages, and reliability. In the context of a regulatory information system, this dimension also encompasses security, interoperability limited to certain modules, and the system's capacity to ensure the traceability of operations.

The organizational dimension refers to internal resources, top management support, organizational culture, digital competencies, and the capacity to support change. Organizational support is particularly important in digital transformation projects because it shapes training, assistance, communication, and the integration of the system into everyday work practices.

The environmental dimension concerns external constraints and pressures, including regulatory requirements, user expectations, institutional norms, and relationships with public- or private-sector partners.

In this article, the TOE framework is applied selectively to incorporate the organizational dimension of technology adoption, particularly organizational support. This approach accounts for the role of change support, training, assistance, and the integration of the system into work routines, without claiming to test all dimensions of the TOE framework.

2.6 Trust, Perceived Security, and Public-Sector Digital Systems

Trust is an important factor in the adoption of digital systems, particularly when such systems involve the exchange of sensitive information or administrative transactions. In digital environments, trust refers to the perception that the system is reliable, secure, and capable of protecting users' interests (Gefen et al., 2003).

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In the context of e-government, trust does not relate solely to the technology. It also concerns the institution deploying the digital service, data protection, the security of information exchanges, and the credibility of administrative procedures (Carter & Bélanger, 2005). In the Nigerian e-filing context, recent findings further highlight the joint role of trust and digital literacy in the adoption of e-government services (AbdulKareem & Oladimeji, 2024). A recent meta-analysis of 68 studies confirms the interdependence of trust, risk, privacy, and security in explaining the intention to use such services (Gupta et al., 2025). Perceived security thus becomes an important condition for the acceptance of digital public services.

In regulatory information systems, trust and perceived security play a more critical role than in many conventional digital services. Users do not merely transmit administrative information; they interact with a platform that supports compliance, authorization, and oversight procedures. Perceived security therefore becomes a component of both the system's credibility and the acceptability of the digital procedure itself.

2.7 Perceived Usefulness and Continuance Intention

The literature on information systems continuance emphasizes that system adoption is not limited to initial use. Following an initial experience with a system, users assess its capacity to meet their expectations and provide sustained support for their activities (Bhattacherjee, 2001). In an African context, a study conducted in Tanzania shows that perceived usefulness, managerial support, and system interactivity are associated with users continuance intention to use e-government services (Mandari & Koloseni, 2023). Continuance intention therefore constitutes a relevant indicator of post-adoption acceptance.

In the case of SIGAM, this perspective is particularly important because the system is examined at an early stage following its public rollout. The issue is therefore not merely whether users access the system, but whether they perceive sufficient value to continue using it. In this study, perceived usefulness is conceptualized as the central mechanism linking conditions of use to continuance intention. This perspective makes it possible to analyze user acceptance of SIGAM as a process of post-adoption consolidation.

2.8 Theoretical Positioning Adopted

The study integrates TAM, UTAUT, TOE, trust, and IS-continuance perspectives around perceived usefulness as a mediating construct. The purpose is not to assemble a universally applicable list of

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predictors. Rather, the integrated model provides a disciplined way to examine how technological, social, organizational, and security conditions are translated into continued use in a specific regulatory and developing-country context.

Perceived ease of use represents the effort required to perform regulated tasks through SIGAM. Social influence captures both interpersonal expectations and the institutional legitimation of the official digital channel. Facilitating conditions and organizational support represent the resources, assistance, and arrangements that enable users to realize the system's possibilities. Trust and perceived security reflect confidence in the artifact, data handling, and the responsible public authority. Perceived usefulness then expresses the value generated when these conditions allow users to complete regulatory tasks reliably and legitimately.

This positioning responds to the ISDC call to theorize with context (Ramadani & Almaarif, 2022). It retains established constructs for comparison with prior research while allowing their empirical meaning to be shaped by regulatory mandates, heterogeneous internal and external users, and the recent institutionalization of SIGAM. Continuance intention is treated as the post-adoption outcome, and perceived usefulness as the mechanism through which the contextualized determinants are expected to operate.

Table N°1: Summary of the Literature Drawn Upon

Theoretical stream	Key references	Contribution to the article
Technology acceptance	Davis (1989); Venkatesh & Davis (2000)	Provides the theoretical grounding for perceived usefulness and perceived ease of use.
UTAUT	Venkatesh et al. (2003); Venkatesh et al. (2016); Dwivedi et al. (2019)	Incorporates social influence and facilitating conditions into the analysis of technology acceptance.
Organizational adoption	Tornatzky & Fleischer (1990); Abdurahman & Kabanda (2024)	Introduces organizational support and the broader adoption context.

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Theoretical stream	Key references	Contribution to the article
Information systems continuance	Bhattacherjee (2001); Mandari & Koloseni (2023)	Provides the theoretical grounding for continuance intention.
Digital trust	Gefen et al. (2003); Carter & Bélanger (2005); AbdulKareem & Oladimeji (2024); Gupta et al. (2025)	Provides the theoretical grounding for trust and perceived security.
E-government	Gil-Garcia (2012); Mergel et al. (2019)	Situates SIGAM within public-sector digital transformation.
Sociotechnical perspective	Orlikowski (1992)	Supports the analysis of SIGAM as a sociotechnical arrangement.
SIGAM context	Hmamouch et al. (2026)	Anchors the SIGAM case in recent Moroccan literature.

Source : Authors' own elaboration.

3. Institutional and Development Context: Morocco, AMSSNuR, and SIGAM

3.1 AMSSNuR as the Nuclear and Radiological Regulatory Authority

The Moroccan Agency for Nuclear and Radiological Safety and Security (AMSSNuR) is the national public authority responsible for regulating and overseeing activities involving sources of ionizing radiation (Agence Marocaine de Sûreté et de Sécurité Nucléaires et Radiologiques, 2023, 2024). Its mandate concerns a field characterized by stringent requirements for safety, security, radiation protection, traceability, and regulatory compliance.

According to the Agency's institutional presentation, AMSSNuR is mandated to ensure that activities and facilities involving sources of ionizing radiation comply with nuclear and radiological safety and security requirements, in accordance with Law No. 142-12 and its implementing regulations. Its regulatory functions include authorization, assessment, regulation, inspection, oversight, and enforcement (Agence Marocaine de Sûreté et de Sécurité Nucléaires et Radiologiques, 2023, 2024; AMSSNuR, n.d.).

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Law No. 142-12 establishes an independent regulatory authority and provides for an authorization and oversight regime based on a graded approach. It covers, among other activities, the import, export, transport, transit, distribution, possession, use, storage, and disposal of sources of ionizing radiation (Royaume du Maroc, 2014).

Within this context, regulatory information management constitutes a strategic issue. AMSSNuR must process authorization applications, monitor technical case files, ensure the traceability of decisions, verify the compliance of regulated activities, and interact with multiple categories of stakeholders. An integrated information system therefore represents an important means of structuring and supporting its regulatory functions.

3.2 SIGAM as a Regulatory Information System

SIGAM, the Integrated Management System for Core Activities, is examined in this article as a regulatory information system. It is not merely a digital portal or a technical tool for the digitalization of procedures. Rather, it constitutes a sociotechnical arrangement designed to support AMSSNuR's core operational processes, particularly those relating to the submission, processing, monitoring, and traceability of regulatory case files.

The characterization of SIGAM as a regulatory information system is justified by the nature of the activities it supports. The procedures concerned relate to areas subject to authorization, oversight, and regulatory compliance requirements. The system must therefore ensure not only efficient administrative processing, but also the reliability of information exchanges, the preservation of audit trails, data security, and consistency in decision-making.

From this perspective, SIGAM is conceptualized as an instrument for the digital transformation of AMSSNuR's regulatory functions. Its value depends not only on its technical characteristics, but also on user acceptance, perceived ease of use, perceived usefulness, support arrangements, trust in the system, and its integration into organizational practices. Institutional data on SIGAM are drawn primarily from AMSSNuR's 2024 Annual Activity Report, which situates the system within the Agency's recent trajectory of digitalizing its regulatory functions.

3.3 Public Rollout and Appropriation Phase

SIGAM forms part of AMSSNuR's recent efforts to digitalize its regulatory procedures. Its public rollout in October 2023 marked an important milestone in making the system accessible to external

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stakeholders (Agence Marocaine de Sûreté et de Sécurité Nucléaires et Radiologiques, 2023). This timeline must be explicitly taken into account when interpreting the empirical findings.

The acceptance observed in this study therefore reflects a relatively early stage of system appropriation. Internal and external users may have different levels of experience with the system, depending on their frequency of use, familiarity with digital platforms, and the nature of the procedures they perform.

4. Research Model and Hypotheses

4.1 General Logic of the Model

Based on the literature review, this study proposes a multidimensional model designed to explain user acceptance of SIGAM. The model draws primarily on the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), the Technology–Organization–Environment (TOE) framework, and research on trust and information systems continuance.

In this study, user acceptance of SIGAM is conceptualized as a post-adoption process. Since the system was rolled out to the public in October 2023, the issue extends beyond users' initial intention to adopt the technology and concerns their capacity to recognize its value in use and continue using it in their professional and regulatory activities.

The model positions perceived usefulness as its pivotal construct. This choice is consistent with the TAM, according to which users are more likely to accept a technology when they perceive it as useful for performing their intended tasks (Davis, 1989). In the case of SIGAM, perceived usefulness refers to the system's capacity to improve the submission, processing, monitoring, traceability, and management of regulatory applications.

Accordingly, the model posits that perceived ease of use, social influence, facilitating conditions, organizational support, trust, and perceived security influence the perceived usefulness of SIGAM. Perceived usefulness, in turn, influences users' continuance intention.

4.2 Model Constructs

The model comprises seven main constructs. The first five constitute the antecedents of perceived usefulness. Perceived usefulness plays a central mediating role, while continuance intention constitutes the final dependent variable.

Table 2 summarizes the constructs and their roles in the model.

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Table N°2: Main Constructs of the Research Model

Construct	Abbreviation	Theoretical grounding	Role in the model
Perceived ease of use	PEOU	TAM	Explanatory variable
Social influence	SI	UTAUT	Explanatory variable
Facilitating conditions	FC	UTAUT	Explanatory variable
Organizational support	SUP	TOE-informed contextual lens	Explanatory variable
Trust and perceived security	CONFI	Trust / E-government	Explanatory variable
Perceived usefulness	PU	TAM	Central mediating variable
Continuance intention	INT	Information systems continuance	Dependent variable

Source : Authors' own elaboration.

In this study, continuance intention is retained as an indicator of post-adoption acceptance. It reflects users' willingness to continue using SIGAM following an initial experience with the system.

4.3 Development of the Direct Hypotheses

Perceived ease of use refers to the extent to which users believe that using a system does not require excessive effort. In the TAM, this construct is one of the major determinants of technology acceptance (Davis, 1989). In the case of SIGAM, it concerns the clarity of the interface, ease of navigation, comprehensibility of procedures, readability of forms, and users' ability to complete their procedures without undue difficulty. A system perceived as simple and intuitive is more likely to be considered useful.

H1: Perceived ease of use positively influences the perceived usefulness of SIGAM.

Social influence refers to users' perceptions that their professional or institutional environment encourages them to use the system. In UTAUT, it constitutes an important determinant of technology acceptance, particularly in organizational contexts where usage practices are shaped by norms, managerial expectations, professional recommendations, or institutional requirements

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(Venkatesh et al., 2003, 2016). In the context of SIGAM, social influence may originate from internal managers, colleagues, professional partners, sector operators, or requirements embedded in regulatory procedures.

H2: Social influence positively influences the perceived usefulness of SIGAM.

Facilitating conditions refer to the technical, organizational, and human resources that enable users to use a system effectively. In UTAUT, they include access to appropriate infrastructure, the availability of technical support, training, assistance, and procedural clarity (Venkatesh et al., 2003, 2016). In the case of SIGAM, these conditions are particularly important because of the diversity of user profiles.

H3: Facilitating conditions positively influence the perceived usefulness of SIGAM.

Organizational support refers to the organization's commitment to deploying, supporting, and promoting an information system. The TOE framework emphasizes that organizational characteristics, available resources, support capabilities, and top management involvement influence technology adoption (Tornatzky & Fleischer, 1990). In the context of SIGAM, such support may take the form of communication about the system, user training, technical assistance, procedural clarification, consideration of user feedback, and change-management support.

H4: Organizational support positively influences the perceived usefulness of SIGAM.

Trust constitutes a central factor in the adoption of digital systems, particularly when they involve the exchange of sensitive data or administrative procedures with regulatory implications. Research on e-government shows that trust in both the technology and the institution deploying influences the acceptance of digital public services (Carter & Bélanger, 2005). In the case of SIGAM, trust and perceived security encompass the confidentiality, integrity, traceability, and security of information exchanges.

H5: Trust and perceived security positively influence the perceived usefulness of SIGAM.

Perceived usefulness refers to the extent to which users believe that SIGAM enhances their performance in carrying out their tasks. In technology acceptance literature, it constitutes one of the most robust determinants of behavioral intention (Davis, 1989; Venkatesh & Davis, 2000). In this study, continuance intention reflects post-adoption acceptance of the system.

H6: Perceived usefulness positively influences users' intention to continue using SIGAM.

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4.4 Mediating Role of Perceived Usefulness

The proposed model assigns a central mediating role to perceived usefulness. This logic is based on the premise that technological, social, organizational, and security-related factors do not automatically lead to continuance intention. Rather, they first influence how users assess the system's functional value.

Accordingly, a system that is easy to use, endorsed within the professional environment, supported by facilitating conditions and the organization, and perceived as secure is more likely to be considered useful. Perceived usefulness subsequently influences users' intention to continue using the system.

H7: Perceived usefulness mediates the relationships between the determinants of SIGAM acceptance and users' continuance intention.

4.5 Theoretical Conceptual Model

Figure 1 presents the theoretical conceptual model of SIGAM acceptance. The model positions perceived usefulness at the center of the acceptance process. Hypotheses H1–H5 concern the effects of technological, social, organizational, and security-related determinants on perceived usefulness. Hypothesis H6 concerns the effect of perceived usefulness on continuance intention. Hypothesis H7 concerns the mediating role of perceived usefulness.

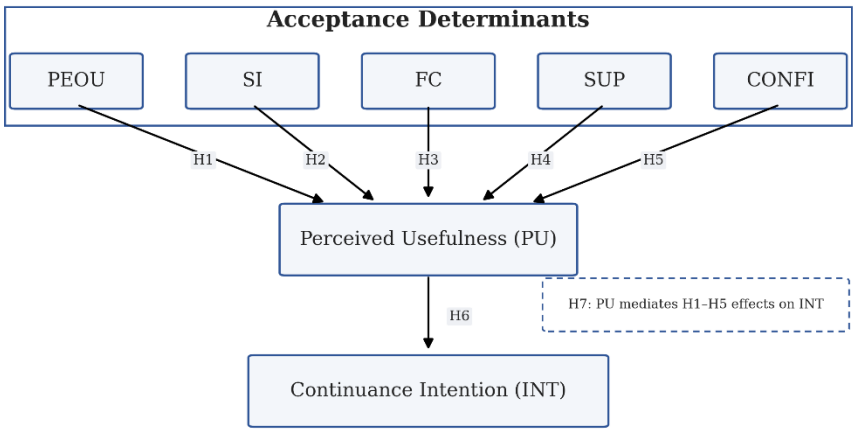

Figure N°1: Conceptual model of SIGAM acceptance

Notes: *PEOU = perceived ease of use; SI = social influence; FC = facilitating conditions; SUP = organizational support; CONFI = trust and perceived security; PU = perceived usefulness; INT = continuance intention.*

Source : Authors' own elaboration.

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5. Research Methodology

5.1 Research Design, Epistemological Stance, and Mode of Reasoning

This study adopts a quantitative, explanatory, and cross-sectional design grounded predominantly in hypothetico-deductive reasoning. This design reflects the objective of empirically testing hypotheses derived from TAM, UTAUT, and research on trust and information systems continuance while simultaneously examining the relationships among several latent constructs. Its epistemological stance is post-positivist: the constructs are treated as fallible approximations, the hypotheses are evaluated probabilistically, and the observed associations are interpreted as context-bound rather than as universal or deterministic laws.

The model combines constructs from TAM, UTAUT, trust and continuance research. TOE is used as a contextual lens for interpreting organizational conditions; it is not claimed to be tested at the organizational level because the data consist of individual user perceptions. All respondents had prior experience with SIGAM, which makes the setting post-adoption, but the dependent construct measures intended continued use rather than observed longitudinal behavior.

The cross-sectional design captures perceptions during an early institutionalization phase after SIGAM's public rollout in October 2023. It allows simultaneous assessment of the proposed relationships but does not establish temporal ordering or causal effects. The results are consequently interpreted alongside the institutional features of the case and the measurement diagnostics.

5.2 Target Population, Sample, and Sampling Strategy

The target population consists of SIGAM users involved in regulatory procedures falling within AMSSNuR’s remit. It comprises two main categories: internal users and external users.

Internal users include AMSSNuR staff members, managers, inspectors, and officials involved in processing, monitoring, analyzing, or reviewing regulatory case files. External users include service providers, companies, healthcare institutions, importers, and other operators concerned with regulatory procedures managed through SIGAM.

The study is based on a sample of 200 respondents, comprising 40 internal users and 160 external users. This distribution reflects the prominent role of external stakeholders within the SIGAM user ecosystem while ensuring the representation of internal users involved in administrative and regulatory processes.

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The sampling strategy may be characterized as purposive stratified sampling. It distinguishes between the two categories of users relevant to the analysis in order to capture perceptions arising from different user positions. This approach is suited to the SIGAM context, in which internal and external users do not interact with the system for the same purposes or under the same constraints. The analysis uses 200 complete observations for the specified model. This sample supports a bounded case analysis, but no claim of population representativeness or formal a priori statistical power is made.

5.3 Data Collection Instrument

Data were collected using a structured questionnaire developed from scales drawn from the technology acceptance literature and adapted to the SIGAM context.

The questionnaire comprises two main sections. The first captures respondent characteristics: user type (internal or external), job function, professional tenure, frequency of SIGAM use, and prior experience with similar systems. The second measures the constructs of the conceptual model through items rated on a five-point Likert scale, ranging from 1 (“strongly disagree”) to 5 (“strongly agree”).

The constructs are specified as reflective because the observed items represent manifestations of underlying perceptions. For example, the items relating to perceived ease of use capture different manifestations of users’ overall perception that the system is easy to use.

In this study, the INT construct operationalizes post-adoption acceptance. It primarily captures users’ intention to continue using SIGAM while also reflecting respondents’ overall evaluation of their experience with the system.

5.4 Data Preparation and Coding

Responses were coded on the five-point Likert scale. Composite means were calculated only for descriptive summaries; the PLS measurement model retained the reflective indicators associated with each latent construct.

Before the statistical analysis, the data underwent quality screening. This process examined incomplete responses, missing values, outliers, and the overall consistency of the observations. Following this screening process, the final dataset comprised 200 valid responses retained for the empirical analysis.

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5.5 Statistical Analysis Method

The data were analyzed using R within the RStudio environment and a partial least squares structural equation modeling (PLS-SEM) approach. This method is appropriate for the study's objective, which is to explain user acceptance of SIGAM based on multiple technological, social, organizational, and security-related determinants.

The use of PLS-SEM is justified on three main grounds: the research model includes several latent constructs measured by multiple indicators; the study pursues both explanatory and predictive objectives; and it seeks to assess direct effects, indirect effects, and the mediating role of perceived usefulness simultaneously (Hair et al., 2022).

5.5.1 Descriptive Analysis

Descriptive analysis was conducted to characterize the sample and examine overall response patterns. It focused on respondents' user type, job function, frequency of SIGAM use, and prior experience with similar systems.

Means, standard deviations, medians, minimum and maximum values, skewness, and kurtosis were also examined for the model constructs. These statistics provide an initial indication of the overall level of system acceptance and the extent to which respondents' perceptions vary.

5.5.2 Measurement Model Assessment

The measurement model was assessed to evaluate the psychometric quality of the constructs used in the study. The assessment covered internal consistency reliability, composite reliability, convergent validity, and discriminant validity.

Internal consistency reliability was assessed using Cronbach's alpha. A value of 0.70 or higher is generally considered acceptable. Composite reliability was also examined to confirm the consistency of the indicators associated with each construct.

Convergent validity was assessed using the average variance extracted (AVE). An AVE value of 0.50 or higher indicates that a construct explains a sufficient proportion of the variance in its indicators (Fornell & Larcker, 1981).

Discriminant validity was examined using the heterotrait–monotrait ratio of correlations (HTMT). This criterion determines whether the constructs included in the model are sufficiently distinct from one another. HTMT values below 0.85 or 0.90 are generally considered acceptable, depending on the degree of conceptual similarity between the constructs (Henseler et al., 2015).

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5.5.3 Structural Model Assessment

The structural model was assessed to test the research hypotheses. The assessment covered path coefficients, statistical significance, confidence intervals, the model's explanatory power, predictive performance, and indirect effects.

Path coefficients were used to assess the strength and direction of the relationships among the constructs. Their statistical significance was examined using *t* statistics, *p* values, and confidence intervals obtained through bootstrapping.

The model's explanatory power was assessed using the coefficient of determination (R^2) and adjusted R^2 (Hair et al., 2022). These indicators assess the proportion of variance explained in the endogenous constructs, particularly perceived usefulness (PU) and continuance intention (INT).

Q^2_predict was reported as a descriptive predictive indicator. Because RMSE and MAE comparisons with an external benchmark are not reported, the analysis does not claim out-of-sample predictive superiority.

Indirect effects were also examined to assess the mediating role of perceived usefulness. This analysis determines whether the technological, social, organizational, and security-related determinants influence continuance intention through their effects on perceived usefulness.

5.5.4 Assessment of Common-Method Risk

Because all focal constructs were measured in one questionnaire, common-method risk was addressed procedurally through anonymous participation, assurances of confidentiality, and clear item wording (Podsakoff et al., 2003). A quantitative single-factor statistic is not reported; the study therefore does not claim that common-method bias is absent. High construct correlations and discriminant-validity results are treated as reasons for caution.

5.5.5 Descriptive Respondent Characteristics

User type and other respondent characteristics were examined descriptively. They are not modeled as independent predictors and are not used to support inferential conclusions in this article.

6. Empirical Results

6.1 Sample Profile

The empirical analysis is based on 200 usable responses collected from SIGAM users. The sample comprises 40 internal AMSSNuR users, representing 20% of respondents, and 160 external users,

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representing 80%. This distribution reflects the prominent role of external stakeholders within the SIGAM user ecosystem.

Managers and professional staff constitute the largest occupational category, with 135 respondents (67.5%). The remaining respondents comprise business owners or directors (12%), inspectors (10.5%), and employees or staff members (10%). Frequency of use varies across the sample: 28% of respondents use SIGAM daily, 20% weekly, 24% monthly, and 28% occasionally. Finally, 47.5% of respondents report prior experience with similar systems, whereas 52.5% have no such experience.

Table 3 reports the general profile of the sample.

Table N°3: General Profile of the Sample

Variable	Category	Frequency	Percentage
User type	External	160	80 %
	Internal	40	20 %
Job function	Manager / professional staff	135	67.5 %
	Business owner / director	24	12 %
	Inspector	21	10.5 %
	Employee / staff member	20	10 %
Frequency of SIGAM use	Daily	56	28 %
	Occasionally	56	28 %
	Monthly	48	24 %
	Weekly	40	20 %
Prior experience with similar systems	Yes	95	47.5 %
	No	105	52.5 %

Source : Survey data; processed by the authors using R in RStudio.

6.2 Descriptive Statistics of the Constructs

The descriptive statistics indicate that the mean scores for all constructs are above the midpoint of the five-point Likert scale. This pattern suggests an overall favorable assessment of SIGAM.

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Trust and perceived security yielded the highest mean score (M = 3.928, SD = 0.793), followed by facilitating conditions (M = 3.844, SD = 0.901) and perceived ease of use (M = 3.830, SD = 1.024). Organizational support and continuance intention each recorded a mean of 3.730. Perceived usefulness had the lowest mean score (M = 3.393, SD = 1.278), although it remained above the scale midpoint.

The overall score was 3.715, with a standard deviation of 0.937. The negative skewness indicates that responses tended toward higher levels of agreement, whereas the negative kurtosis values indicate distributions that were generally flatter than the normal distribution.

Table 4 reports descriptive statistics for the model constructs.

Table N°4: Descriptive Statistics of the Constructs

Construct	N	Mean	Standard deviation	Median	Min.	Max.	Skewness	Kurtosis
PU	200	3.393	1.278	3.833	1.167	5	-0.400	-1.365
PEOU	200	3.830	1.024	4.000	1.667	5	-0.630	-0.716
SI	200	3.597	1.114	3.800	1.000	5	-0.463	-0.702
FC	200	3.844	0.901	3.800	2.000	5	-0.098	-1.314
CONFI	200	3.928	0.793	4.000	1.800	5	-0.399	-0.536
SUP	200	3.730	1.019	3.600	1.000	5	-0.457	-0.286
INT	200	3.730	1.216	4.000	1.000	5	-0.435	-1.225
Overall score	200	3.715	0.937	3.861	1.611	5	-0.385	-0.984

Source : Survey data; processed by the authors using R in RStudio.

6.3 Internal Consistency Reliability and Convergent Validity

The measurement model assessment indicates that the constructs exhibit satisfactory levels of internal consistency, reliability and convergent validity. All Cronbach's alpha coefficients exceed the conventional threshold of 0.70. The highest values were obtained for continuance intention (α

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= 0.963), perceived usefulness (α = 0.961), social influence (α = 0.960), and perceived ease of use (α = 0.958).

Composite reliability corroborates these findings, with ρC values ranging from 0.884 to 0.963. The average variance extracted (AVE) values are also satisfactory, as they all exceed the commonly accepted threshold of 0.50 for establishing convergent validity (Fornell & Larcker, 1981). They range from 0.612 for facilitating conditions to 0.867 for continuance intention. These results support the convergent validity of the constructs.

However, the very high Cronbach's alpha values observed for some constructs may indicate substantial similarity or potential redundancy among certain indicators. This finding warrants a complementary assessment of discriminant validity.

Table 5 summarizes the reliability and convergent-validity results.

Table N°5: Internal Consistency Reliability and Convergent Validity

Construct	Cronbach's alpha	ρC	ρA	AVE	Interpretation
PEOU	0.958	0.958	0.962	0.795	Satisfactory
SI	0.960	0.960	0.960	0.827	Satisfactory
FC	0.885	0.884	0.905	0.612	Satisfactory
CONFI	0.892	0.889	0.909	0.624	Satisfactory
SUP	0.927	0.925	0.929	0.713	Satisfactory
PU	0.961	0.961	0.962	0.805	Satisfactory
INT	0.963	0.963	0.963	0.867	Satisfactory

Source : Survey data; processed by the authors using R in RStudio.

6.4 Discriminant Validity

Discriminant validity was assessed using the heterotrait–monotrait ratio of correlations (HTMT), in accordance with methodological recommendations for PLS-SEM models (Henseler et al., 2015). Most construct pairs exhibited values consistent with acceptable discriminant validity. However,

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three pairs exceeded the critical threshold of 0.90: INT–PU = 0.964, INT–SI = 0.942, and SUP–PEOU = 0.913.

These findings indicate substantial empirical overlaps among certain constructs. The strong overlap between INT and PU suggests that respondents closely associate the system's functional value with their intention to continue using it. The overlap between INT and SI indicates that continuance intention is also closely associated with the social and institutional legitimation of system use. Finally, the overlap between SUP and PEOU may indicate that organizational support is perceived as directly contributing to ease of use.

Table 6 reports the principal HTMT values.

Table N°6: Discriminant Validity: Main HTMT Values

Construct pair	HTMT	Interpretation
INT–PU	0.964	Potential discriminant validity concern
INT–SI	0.942	Potential discriminant validity concern
SUP–PEOU	0.913	Potential discriminant validity concern
SUP–SI	0.878	Acceptable discriminant validity, but substantial overlap
PU–SI	0.872	Acceptable discriminant validity, but substantial overlap
INT–SUP	0.870	Acceptable discriminant validity, but substantial overlap
SI–PEOU	0.859	Acceptable discriminant validity, but substantial overlap

Source : Survey data; processed by the authors using R in RStudio.

6.5 Structural Model Assessment

The structural model assessment highlights the central role of perceived usefulness in the reported associations. Perceived ease of use, social influence, facilitating conditions, and trust and perceived security are positively associated with perceived usefulness. Organizational support exhibits a significant negative coefficient that requires cautious interpretation.

Perceived ease of use is positively and statistically associated with perceived usefulness (beta = .500, t = 4.690, p < .001), a result consistent with H1. Social influence is also positively associated

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with perceived usefulness (beta = .399, t = 3.265, p = .0011), consistent with H2. Facilitating conditions show a positive association (beta = .296, t = 4.408, p < .001), consistent with H3. Trust and perceived security are positively associated with perceived usefulness (beta = .368, t = 4.749, p < .001), consistent with H5.

Organizational support has a negative and statistically significant association with perceived usefulness (beta = -.485, t = -3.225, p = .0013). H4 is not supported in the hypothesized direction. This finding should not be interpreted as substantive evidence that support is harmful; construct overlap and possible statistical suppression make the coefficient sensitive.

Finally, perceived usefulness has a very strong positive association with continuance intention (beta = .965, t = 135.954, p < .001), a result statistically consistent with H6 but subject to the construct-overlap cautions reported above.

Table 7 summarizes the structural path coefficients.

Table N°7: Path Coefficients of the Structural Model

Hypothesis	Relationship	β	t value	*p* value	95% CI	Result
H1	PEOU → PU	0.500	4.690	< 0.001	[0.298; 0.713]	Supported
H2	SI → PU	0.399	3.265	0.0011	[0.137; 0.640]	Supported
H3	FC → PU	0.296	4.408	< 0.001	[0.183; 0.431]	Supported
H4	SUP → PU	-0.485	-3.225	0.0013	[-0.777; -0.245]	Not supported in the hypothesized direction
H5	CONFI → PU	0.368	4.749	< 0.001	[0.208; 0.503]	Supported
H6	PU → INT	0.965	135.954	< 0.001	[0.949; 0.976]	Supported

Source : Survey data; processed by the authors using R in RStudio.

6.6 Indirect Effects and the Mediating Role of Perceived Usefulness

Specific indirect associations were examined to assess whether the reported pattern was consistent with the proposed mediating role of perceived usefulness. Perceived ease of use, social influence, facilitating conditions, and trust and perceived security each showed a positive indirect association with continuance intention through perceived usefulness.

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The estimated indirect associations are PEOU -> PU -> INT (beta = .482, p < .001), SI -> PU -> INT (beta = .385, p = .0011), FC -> PU -> INT (beta = .285, p < .001), and CONFI -> PU -> INT (beta = .355, p < .001). Organizational support shows a negative indirect association (beta = -.468, p = .0012), which requires the same caution as its association with perceived usefulness.

Overall, the indirect associations are consistent with H7, subject to the reservation concerning organizational support. Because the data are cross-sectional, the results do not establish temporal mediation.

Table 8 reports the specific indirect effects through perceived usefulness.

Table N°8: Indirect Effects Through Perceived Usefulness

Indirect relationship	**β**	***t* value**	***p* value**	**95% CI**	**Interpretation**
PEOU → PU → INT	0.482	4.705	< 0.001	[0.289; 0.688]	Positive and significant
SI → PU → INT	0.385	3.260	0.0011	[0.131; 0.614]	Positive and significant
FC → PU → INT	0.285	4.421	< 0.001	[0.177; 0.415]	Positive and significant
CONFI → PU → INT	0.355	4.780	< 0.001	[0.201; 0.484]	Positive and significant
SUP → PU → INT	-0.468	-3.238	0.0012	[-0.741; -0.234]	Negative and significant; interpret with caution

Source : Survey data; processed by the authors using R in RStudio.

6.7 Explanatory and Predictive Indicators

The predictors explain 89.1% of the variance in perceived usefulness (R^2 = .891; adjusted R^2 = .888), while perceived usefulness explains 93.1% of the variance in continuance intention (R^2 = .931; adjusted R^2 = .930). The corresponding Q^2_predict values are .644 for perceived usefulness and .924 for continuance intention. These unusually high values should not be read as proof of

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practical prediction because no external holdout benchmark is reported and perceived usefulness overlaps strongly with continuance intention.

6.8 Construct Overlap and Common-Method Risk

The single-source, self-reported design creates additional common-method risk. Procedural safeguards reduce but do not eliminate that risk, and the available analysis does not support a quantitative single-factor claim. Together with HTMT values above .90 for INT-PU, INT-SI, and SUP-PEOU, these diagnostics require the path coefficients to be interpreted as associations within one early-stage usage experience rather than isolated causal effects.

7. Discussion

7.1 Empirical Pattern and Interpretive Boundaries

The results identify perceived usefulness as the focal mechanism in the reported model. Perceived ease of use, social influence, facilitating conditions, and trust and perceived security are positively associated with usefulness, whereas organizational support has a negative coefficient. Usefulness is in turn very strongly associated with continuance intention. This pattern is compatible with post-adoption theory, but its magnitude must be read alongside the cross-sectional design and HTMT overlap between usefulness and intention.

The evidence therefore supports a contextual explanation of associations, not a claim that the model has identified isolated causal effects. In particular, the coefficient from usefulness to intention (beta = .965) may partly capture respondents' overall evaluation of one early usage experience. The result is informative because it reveals how closely value and intended continuation are coupled during SIGAM's institutionalization, but it also signals a need for more distinct measures and longitudinal behavioral data.

7.2 Perceived Usefulness as an Institutionally Embedded Mechanism

In a conventional acceptance model, usefulness is often treated as an individual judgment that a technology improves task performance. In SIGAM, the construct has a wider institutional content. It includes instrumental value from clearer and more traceable procedures, normative value from using a recognized regulatory channel, and enabling value created by access to skills, assistance, and secure exchanges. As an interpretive sensitizing concept, this combination is described here as institutionally embedded usefulness; it is not modeled as a separate latent construct.

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This interpretation links acceptance research with the ISDC view that digital artifacts acquire meaning through local conversion factors and institutional arrangements (Avgerou, 2008; Dini et al., 2023). SIGAM's possibilities are not realized by software availability alone. They depend on whether internal staff and regulated operators can integrate the system into legally structured tasks and obtain recognizable value from doing so.

7.3 Social Legitimation, Enabling Conditions, and Trust

The positive social-influence coefficient should not be reduced to peer pressure. For internal users, influence may arise through managerial guidance, colleagues, and established procedures. For external users, it may reflect sector practice and the expectation that SIGAM is becoming the normal channel for regulatory interaction. Social influence thus expresses the progressive legitimation of the digital channel as well as interpersonal expectations.

Facilitating conditions and trust also have context-specific meanings. Users need compatible equipment, skills, guidance, and assistance, but they also need confidence in data handling and in the public authority responsible for the system. These findings resemble other developing-country public IS studies in which interoperability, workload, capabilities, vendors, and institutional pressures condition implementation (Binamungu & Kimaro, 2025; Kaunda et al., 2025; Sihotang et al., 2023).

7.4 Organizational Support and Statistical Suppression

The negative organizational-support coefficient is counter-theoretical and should not be interpreted as a substantive benefit of reducing support. Support overlaps empirically with perceived ease of use. The coefficient may therefore reflect statistical suppression, reactive support directed toward users experiencing difficulty, or a measure that combines technical, procedural, managerial, and communication activities that users evaluate differently.

A stronger design would disaggregate those forms of support and compare internal and external users. Qualitative interviews could also determine whether reported support represents an enabling resource or a response to problems. Until such evidence is available, the result is best treated as a diagnostic finding that limits the interpretation of H4.

7.5 From Intended Continuation to Development Outcomes

ISDC research emphasizes practices and development consequences rather than intentions alone. The present study does not measure actual continued use, regulatory performance, safety outcomes,

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or public value. It instead explains how existing users evaluate a recently deployed digital regulatory channel and whether they intend to continue using it. This is an intermediate outcome in the institutionalization process, not evidence that broader benefits have already been realized.

The development relevance lies in identifying conditions that may enable or constrain later outcomes. Longitudinal linkage of survey responses with system logs, completion rates, processing times, support requests, and user-group differences is required to determine whether institutionally embedded usefulness becomes sustained practice and improved regulatory capacity.

8. Implications for ISDC Research and Public Regulatory Practice

8.1 Implications for ISDC Theory

The study contributes to ISDC research by treating the Moroccan regulatory setting as part of the explanation rather than as a geographical label. The meaning of acceptance constructs is shaped by the regulator-operator relationship, formal procedures, heterogeneous user capabilities, and the recent normalization of an official digital channel. This supports calls to theorize with context rather than simply replicate universal models (Avgerou, 2008; Ramadani & Almaarif, 2022).

The sensitizing concept of institutionally embedded usefulness extends the interpretation of perceived usefulness in public regulatory systems. It connects functional performance with traceability, compliance assurance, institutional legitimacy, and enabling conditions. Perceived usefulness is thus positioned as a translation mechanism between the digital artifact and intended continuation, not as a decontextualized individual belief.

The integrated model is not proposed as a new universal acceptance theory. TAM and UTAUT provide individual-level constructs, trust research addresses the sensitive exchange relationship, and TOE informs contextual interpretation of organizational conditions. This bounded use of theory avoids claiming an organization-level TOE test from individual perceptions.

8.2 Implications for Public Regulatory Practice

AMSSNuR and comparable authorities should treat digitalization as an ongoing institutionalization process. Practical priorities include clear workflows, understandable forms and status information, reliable notifications, and assistance differentiated for internal staff and external operators. These features make the value of the system visible in routine regulatory tasks.

Trust requires both technical safeguards and institutional communication. Users should understand how information is protected, who is responsible for data and incident handling, and how digital

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records relate to legal procedures. A multi-stakeholder feedback mechanism can identify unequal access, workload, and support problems that an aggregate acceptance score may conceal.

The negative support coefficient should trigger diagnosis rather than service withdrawal. Authorities should distinguish training, technical help, procedural guidance, management communication, and change support, and then evaluate each form by user group. Objective usage and service indicators are needed before claiming improvements in administrative or regulatory performance.

8.3 Methodological Implications

The study demonstrates the value and the limits of PLS-SEM in an early-stage, single-case setting. Reliability and convergent-validity statistics are strong, but high alpha and HTMT values show that good aggregate fit indicators do not guarantee conceptually distinct constructs or stable coefficients. Full indicator loadings and the complete HTMT matrix are not reported here, which limits independent audit of the measurement model.

Future designs should separate usefulness, satisfaction, legitimacy, and intention more sharply; pretest items with both user groups; and combine survey, interview, and behavioral data. Repeated measurement would permit stronger inference about how acceptance changes as a regulatory platform matures.

9. Limitations and Future Research

9.1 Limitations

The evidence comes from one Moroccan regulatory authority and a purposive sample of 200 users. The case provides contextual depth but does not support statistical generalization to other administrations or countries. Internal and external users are represented unevenly, and the available analysis does not estimate separate group models.

The cross-sectional, self-reported design precludes temporal or causal claims and remains vulnerable to common-method bias. The outcome is continuance intention rather than observed continued use. Objective effects on processing, access, regulatory quality, safety, or public value were not measured.

Measurement and structural diagnostics impose further constraints. HTMT exceeds .90 for several construct pairs; perceived usefulness and intention are especially close. The organizational-support coefficient is consequently sensitive to suppression. The absence of indicator-level loadings, the

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complete HTMT matrix, and a quantitative common-method diagnostic restricts independent audit of the measurement model.

9.2 Future Research

Longitudinal research should connect perceptions with system logs and process indicators to test whether intended continuation becomes sustained practice. Repeated data collection could show whether usefulness, trust, and support change as SIGAM and its users mature.

Mixed-method and multi-group studies could clarify the negative support coefficient and compare internal staff with regulated operators. Qualitative evidence is particularly important for identifying locally meaningful forms of support, legitimacy, and trust that standardized scales may combine.

Comparative studies across Moroccan public platforms and regulatory authorities in Africa and the wider Global South could assess which mechanisms travel across settings. Such work should preserve contextual explanation rather than treating country location as a control variable.

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10. Conclusion

This study examined post-adoption acceptance of SIGAM, a public regulatory information system deployed in Morocco. Using survey data from 200 internal and external users and PLS-SEM, it found that perceived usefulness occupies a central position between technological, social, organizational, and security-related conditions and continuance intention. Perceived ease of use, social influence, facilitating conditions, and trust and perceived security were positively associated with usefulness. The negative organizational-support coefficient must be interpreted cautiously because of construct overlap.

For ISDC research, the main insight is that usefulness is institutionally embedded. In a regulatory environment, users value not only speed and ease, but also traceability, compliance assurance, secure exchanges, and recognition of the system as a legitimate channel. Continued use is therefore produced by the fit between the IS artifact, user capabilities, organizational arrangements, and the regulatory environment.

The study's cross-sectional and self-reported data, the overlap between usefulness and continuance intention, and the lack of separate group models limit causal and external generalization. Nevertheless, the case provides a context-sensitive account of how a specialized public IS becomes embedded in regulatory practice. Longitudinal and multi-group research should examine how these mechanisms evolve as SIGAM matures and whether similar configurations appear in other public regulatory authorities in Africa and the wider Global South.

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