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How Do Flexible Norms Achieve Effectiveness for Sensitive Personal Information Governance in Tourism Big Data Commercialization?

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This study investigates how flexible norms are institutionally designed to achieve intended de facto binding force in governing sensitive personal information within tourism big data commercialization, addressing the theoretical gap regarding their effectiveness mechanisms in the absence of state coercion. Employing W. Richard Scott's Three Pillars of Institutions (regulative, normative, and cultural-cognitive) as a theoretical framework, this research conducts a structured document analysis of 11 representative flexible norms (from 12 original documents, with two documents from the same corporation consolidated into one source), including national guidelines, industry standards, corporate policies, and self-regulatory covenants. Sample selection follows the logic of comparative case sampling. The analysis identifies three synergistic mechanisms through which flexible norms are designed to generate intended de facto binding force: (1) role-driven mechanisms that clarify governance subjects and accountability structures; (2) content-driven mechanisms that translate abstract principles into operational rules through detailed institutional design; and (3) enforcement-driven mechanisms that leverage public commitments, training systems, and reputational constraints to promote norm internalization. This study moves beyond static textual analysis to reveal the intended mechanisms through which flexible norms aim to achieve practical effectiveness, offering a systematic theoretical explanation grounded in organizational institutionalism and providing actionable pathways for sensitive information governance in data-driven tourism contexts. The findings are based on textual evidence and identify design features associated with intended effectiveness; empirical validation of actual behavioral effects remains a task for future research.

Keywords: *Tourism Big Data; Flexible Norms; Sensitive Personal Information; Structured Document Analysis; Intended Effectiveness*

Introduction

Research Background and Problem Statement

Driven by the wave of digital transformation, the tourism industry has emerged as a critical domain for the data-driven economy. The entire life-cycle of tourism activities—from pre-trip information search and itinerary planning, to booking tickets, accommodation, and dining, to transportation navigation during the trip, and finally to post-trip evaluations and sharing—continuously generates massive data footprints (Safaa et al. 2021, Benhaida et al. 2024). This data encompasses not only basic identity information but also highly sensitive data, such as location trajectories, biometric

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information, payment records, and personal preferences, collectively constituting what is termed "tourism big data" (Perkumienė 2025, Florido-Benítez 2024).

The commercial utilization of tourism big data creates immense economic value. Through precise user profiling and personalized recommendations, entities such as online travel agencies (OTAs), hotel groups, and airlines can optimize services, enhance customer experiences, and implement targeted marketing (Buhalis et al. 2023). However, this value-creation process is accompanied by systemic privacy risks. Within the multi-actor, long-chain circulation network of tourism services, tourists' sensitive personal information frequently flows and is shared among consumers, platforms, suppliers, third-party service providers, and technology vendors, forming a complex data ecosystem (Yallop et al. 2023). Each instance of data transfer can potentially become a point of leakage. Whether due to cyberattacks, internal policy violations, or partners' security lapses, large-scale data breaches remain a persistent threat (Herke et al. 2025). This coexistence of "value creation" and "privacy risk" constitutes the fundamental paradox of tourism big data commercialization (O'Connor 2020).

In response to the systemic risks mentioned above, traditional governance paths have primarily relied on rigid norms backed by state coercive power, such as various countries' Personal Information Protection Laws and related data security regulations. These laws and regulations set baseline standards for data collection, processing, storage, and transmission. However, when confronted with rapidly evolving tourism technologies and dynamic, complex commercial scenarios, rigid regulation faces a significant "pacing problem" (Marchant 2011). The complexity and lengthy nature of legislative processes stand in stark contrast to the exponential iteration speed of tourism technology, leading to what is known as the "Collingridge Dilemma" (Collingridge 1980). In the early stages of technological development, regulatory intervention is difficult due to insufficient risk information. Conversely, when a technology's social impacts become clear and demand regulation, its developmental path and application models have often become highly solidified, making regulatory adjustment extremely costly. Within the domain of tourism big data governance, this dilemma manifests in two ways: laws related to tourism may be outdated regarding the technological landscape they address by the time they are enacted, or conversely, they may inadvertently spur the creation of new pathways for regulatory circumvention (Moses 2007, Zhang 2023). Furthermore, tourism services involve numerous heterogeneous actors—OTAs, hotels, airlines, local operators, payment processors, etc.—forming a loosely coupled complex network. Traditional "command-and-control" regulatory models struggle to penetrate these multi-layered outsourcing and partnership arrangements to effectively monitor and enforce data governance across the entire data life-cycle. This results in high compliance costs and significant enforcement difficulties (Kalesnykas 2025).

Consequently, a flexible governance path has gradually emerged and plays an increasingly important role in practice. This path is embodied in flexible norms such as industry guidelines, technical standards, corporate codes of conduct, privacy certifications, and self-regulatory conventions (Luo and Song 2009, Shen 2023). Flexible norms are a normative model rooted in the concepts of agile and flexible governance. Originating from the idea of flexible governance, it does not rely on top-down administrative compulsion but rather employs "non-mandatory methods to stimulate the inner potential, initiative, and creativity of governance partners and objects" to achieve good

governance goals (Tan 2014). Compared to rigid norms, which directly define the rights and obligations of regulated subjects and enforces provisions through coercive measures, flexible norms recognize informal relationships as an important feature of social relations. It transmits pressure through these informal relationships to mitigate conflicts and contradictions in a non-violent, low-coercion manner (Wu and Hu 2021). Participants in flexible governance manage internal affairs through non-mandatory means such as rational communication and collaborative cooperation, reaching consensus through equal dialogue. Unlike rigid norms, which are formulated by the state and enforced by coercive power, flexible norms are typically developed jointly by industry organizations, corporate alliances, or multi-stakeholder groups. The binding force does not stem from external sanctions but relies on the voluntary compliance of participants (Shelton 2000, Abbott and Snidal 2000). In tourism big data governance, elements such as big data guidelines from government-affiliated platforms, travel data standards from industry associations, privacy policies and developer agreements formulated by major OTAs, and various privacy protection certifications collectively constitute a flexible governance system.

However, flexible norms are not without their own dilemmas. On one hand, flexible norms shall maintain their flexibility and therefore cannot use mandatory clauses like rigid norms to directly constrain behavior. On the other hand, flexible norms' reliance on participants' voluntariness raises a critical question: in the absence of state coercive power, how can the effectiveness of flexible norms be ensured?

Current Research Status on Flexible Governance

Recognizing the limitations of rigid norms, academia has increasingly turned its attention to flexible governance models centered on flexible norms (Tan 2014). In international law, "soft law" was initially defined as normative instruments that are "not legally binding in principle, but may produce practical effects" (Shelton 2000, Abbott and Snidal 2000). Subsequently, this concept was introduced into domestic law, particularly in emerging fields like technology governance and environmental governance, referring to rules, principles, and codes of conduct formulated by non-state actors and implemented through non-coercive means (Shen 2023). Researchers generally agree that flexible norms offer advantages such as flexible formulation processes, rapid responsiveness, and the ability to incorporate diverse participants, enabling better adaptation to technological iteration and social change (Luo and Song 2009).

In the field of technology governance, significant research has accumulated on the analysis of flexible norms texts, such as AI ethics guidelines (Jobin et al. 2019) and data privacy protection frameworks (Zeng et al. 2024). Scholars have outlined the core principles of these texts and compared different global governance models (Gutierrez et al. 2020).

However, current research exhibits a significant theoretical gap: numerous studies remain at the static analysis of normative texts—describing and comparing "what flexible norms say"—while critically lacking dynamic mechanism inquiries into "how flexible norms produce actual effects" (Bietti 2020). Although some scholars suggest that flexible norms may exert influence through mechanisms like reputation, market pressure, or community identity, these assertions are mostly empirical observations

lacking a systematic theoretical framework to explain how this "de facto binding force" is generated, maintained, and operates. Regarding its effectiveness in the high-risk area of sensitive personal information governance, in-depth theoretical and empirical research is particularly scarce.

Research Purpose

To fill the aforementioned theoretical gap, this study proposes introducing the new institutionalism theory of organizational sociology. Based on W. Richard Scott's "Three Pillars of Institutions" framework (Scott 2014), this study aims to explain the sources of flexible norms' effectiveness and its driving mechanisms. Scott argues that institutions are social structures composed of three major elements—regulative, normative, and cultural-cognitive—which together provide stability and meaning to social life.

The regulative pillar emphasizes explicit rule-setting, monitoring, and sanctioning activities, with its core mechanism being coercion and fear of violating rules. This is the typical domain where rigid norms operate. (Scott 2014).

The normative pillar emphasizes obligations, expectations, and appropriateness in social life. (March and Olsen 1989) It guides actors to fulfill responsibilities commensurate with their social roles through value assessment and normative constraints. Flexible norms, such as industry self-regulatory conventions and professional certifications, primarily operates at this level.

The cultural-cognitive pillar focuses on the shared understandings, cognitive frameworks, and beliefs that actors hold regarding specific situations and modes of behavior (Suchman 1995). When a set of rules is internalized as the "taken-for-granted" way of doing things, its binding force is most profound. For example, viewing user privacy protection as a moral baseline that entity "shall" uphold, rather than merely a compliance requirement.

Specifically applied to tourism big data governance, an effective set of flexible norms need not only to establish a consensus at the normative level that "protecting user privacy is industry best practice," but also to provide actors with a predictable action framework through clear rules, role definitions, and implementation mechanisms. Ultimately, it needs to shape the relevant actors' value identification with data protection. The Three Pillars framework will help us deeply understand how flexible norms function, ultimately achieving the transformation from "what ought to be" rules to "what is" action. This study will select typical data governance flexible norms within the tourism industry as research objects, deeply analyzing their institutional designs across the regulative, normative, and cultural-cognitive dimensions, and examining how these designs collectively intend to produce "de facto binding force" on participating entities.

Methodology

Theoretical Framework: W. Richard Scott's Three Pillars of Institutions

Scott defines institutions as "composed of regulative, normative, and cultural-cognitive elements that, together with associated activities and resources, provide

stability and meaning to social life" (Scott 2014). This framework moves beyond a legal-centric perspective that emphasizes state coercive power, offering a systematic analytical tool for understanding how flexible norms generate de facto binding force.

The regulative pillar focuses on the coercive binding force of institutions. Its core mechanism is instrumental "expediency," achieving behavioral regulation through explicit rule-setting, monitoring, and sanctions (Scott 2014). The legitimacy basis of this constraint lies in "regulative legitimacy"—where actors comply with rules due to fear of sanctions (Suchman 1995). Although the flexible norms at the center of this study do not possess the coercive power of national laws, they still contain unique reward and punishment logics implemented internally by enforcement entities. For example, industry association standards may impose internal sanctions through means such as revoking certification qualifications or expelling members; corporate self-regulatory conventions may create constraints through intra-industry notifications or membership revocation. Therefore, proceeding from the regulative pillar, this study will focus on examining the internal reward and punishment mechanisms and role-driven implementation structures embodied in the texts.

The normative pillar concerns the obligatory and expectational dimensions of social life. It includes "the specification of goals or objectives" and "the appropriate ways to pursue them" (Scott 2014). Its legitimacy basis lies in "normative legitimacy"—where actors comply with rules due to recognition of social obligations (Suchman 1995). The core of the normative system is the "logic of appropriateness," where actors act based on their understanding of their roles and obligations (March and Olsen 1989). In the realm of flexible norms, this pillar manifests through the formulation of standards, certification implementation, guideline issuance, and other means that specify what constitutes normatively compliant behavior.

The cultural-cognitive pillar is the most sociologically oriented part of Scott's theory, emphasizing that institutions are "composed of shared conceptions that constitute the nature of social reality and the frames through which meaning is made" (Scott 2014). Its legitimacy basis lies in "cognitive legitimacy"—where actors comply with rules because they view them as "taken for granted" (Suchman 1995). The core mechanism of cultural-cognitive elements is "orthodoxy," where actors follow a certain behavioral pattern because it is considered the taken-for-granted way of doing things, as "the way we do things in these situations" (DiMaggio and Powell 1991). For Flexible norms, their effectiveness ultimately depends on whether it can be internalized by relevant actors as a shared belief and behavioral logic, gradually making compliant behavior the "natural choice" for participants through public commitments, information disclosure, performance indicators, and other means.

In the subsequent analysis, this paper will categorize the governance designs distributed across the 12 samples into the "regulative," "normative," and "cultural-cognitive" domains. It will then examine which specific effectiveness-guaranteeing mechanisms emerge under each pillar, thereby systematically revealing the mechanisms through which flexible norms generate effectiveness under the Three Pillars of Institutions framework. This framework echoes the analysis of institutional change and organizational fields by Greenwood et al. (2008) and provides a foundation for subsequent theoretical construction.

It is important to clarify how flexible norms differ from rigid norms within this three-pillar framework. Rigid norms derive their binding force primarily from the

regulative pillar—explicit rules backed by state-enforced penalties. Flexible norms, by contrast, cannot rely on such coercive mechanisms. Instead, they rebalance the three pillars: the regulative pillar is not absent but operates through internal organizational sanctions rather than state coercion; the normative pillar becomes central, specifying appropriate behavior through standards and guidelines; and the cultural-cognitive pillar is activated through training, public commitment, and reputation. The three mechanisms identified in this study reflect this rebalancing: role-driven mechanisms embed accountability within organizations; content-driven mechanisms reduce ambiguity through detailed rules; enforcement-driven mechanisms leverage reputation and internalized norms. This configuration is not exclusive to flexible norms, but its relative weighting differs systematically from that of hard law.

Research Design: Structured Document Analysis with Comparative Sampling Logic

This study adopts structured document analysis (Bowen 2009) as its core research method, and sample selection follows the logic of comparative case sampling (Seawright and Gerring 2008), specifically maximum variation sampling. Structured document analysis is appropriate for research questions that ask "how are norms designed to achieve intended effectiveness?" rather than "do norms actually achieve effectiveness?" (Bowen 2009). The present study focuses on the former. Therefore, the analysis identifies mechanisms that are embedded in the texts as intended governance logic. Whether these mechanisms produce compliance, reduce privacy breaches, or change organizational behavior remains an empirical question requiring survey, interview, or observational data. This methodological boundary is explicitly acknowledged throughout the study.

Sample Selection and Consolidation

This study employs purposive sampling, selecting 11 independent normative sources (representing 12 original documents, with two documents from the same corporation consolidated as one source due to content overlap). The sample includes: national/provincial guidelines (Samples 1–4), industry association standards (Samples 5–8), corporate policies (consolidated from F corporation's two documents into Sample 9), and self-regulatory covenants (Sample 12). For transparency, the original 12 documents are listed in Table 1, with consolidation noted.

Rationale for consolidation: F corporation's Rules on the Protection of Minors' Personal Information (original Sample 9) and Privacy Policy (original Sample 10) are issued by the same entity, and the privacy policy already covers minors' data protection. Treating them as independent samples would artificially inflate the prevalence of certain mechanisms (e.g., training systems, public commitments) due to content dependency. Therefore, they are treated as a single corporate policy source. The analysis refers to the more comprehensive document (Privacy Policy) while noting supplementary provisions from the minors-specific rules where distinct.

Specifically, sample selection considered three key dimensions:

1. Formulating body: Including national ministries, provincial standardization bodies, industry associations, and corporations;
2. Norm level: Including national/provincial guidelines, industry standards, corporate policies, and self-regulatory conventions;
3. Binding intensity: Forming a continuum from "certification standards" to "voluntary commitments." Through the cross-combination of these three dimensions, the 12 samples cover the main types of flexible norms currently existing in China. The specific composition of the samples is as follows: (see Table 1)

Table 1. *Basic Information on the 12 Flexible Norm Samples*

No.	Category	Sample Name	Issuing Body	Year	Description
1	National/Provincial Government Industry Guidelines or Standards	Tourism Big Data Security and Privacy Protection Requirements (Draft for Comments)	Ministry of Culture and Tourism	2026	An industry guidance document issued by a national ministry, reflecting top-level regulatory intent.
2		GB/T 35273-2020 Information Security Technology - Personal Information Security Specification	State Administration for Market Regulation	2020	A national recommended standard specifying the relevant behaviors of personal information controllers in various stages of information processing.
3		DB62/T 5083-2025 Tourism Big Data Security and Privacy Protection Standard	Gansu Provincial Market Supervision Administration	2025	A local standardization document, reflecting regional governance characteristics.
4		DB14/T 3539-2025 Guide to Privacy Protection in Tourist Hotel Guest Rooms	Shanxi Provincial Market Supervision Administration	2025	A privacy protection guide for a specific scenario, reflecting vertical domain
5	Industry Association Standards	T/CSAS 0016-2025 Requirements on personal information protection	Sichuan Cyberspace Security Association	2025	Security standards formulated by an industry association, emphasizing technical compliance.

No.	Category	Sample Name	Issuing Body	Year	Description
6		T/NBSIA 003-2024 Data privacy protection and security requirements for urban public transportation users	Ningbo Software Industry Association	2024	Focuses on public transportation data privacy, including technical requirements such as anonymization.
7		T/CCTAS 11-2020 Self-discipline specifications for app-based ride-hailing company safety and security operation	China Communications and Transportation Association	2020	An industry self-regulatory norm for ride-hailing, covering safe operation and data protection.
8		Compliance Management Guidelines for User Rights Protection in Mobile Internet Application Services (2025)	Internet Society of China	2025	Focuses on personal information protection in apps, with a broad scope of application.
9	Corporate Privacy Policies & Industry Self-Regulatory Covenants	F's Rules on the Protection of Minors' Personal Information	F corporation	2025	An online travel platform's special protection rules for minors' personal information.
10		F's Privacy Policy	F corporation	2025	The platform's overall privacy protection rules.
11		X's Personal Information Protection Policy for Driver/Guide End	X corporation	2025	The platform's personal information protection rules for the driver
12		Self-Regulatory Covenant for Promoting Interconnectivity and	Internet Society of China	2026	A multi-party self-regulatory covenant aimed at promoting data interconnectivity and interoperability

No.	Category	Sample Name	Issuing Body	Year	Description
		Interoperability of Internet Platforms			between platforms.

The samples include flexible norms that are widely cited or formally adopted by industry or government bodies, which serves as a proxy for perceived legitimacy rather than measured effectiveness. We do not claim that these norms have been empirically validated as effective; rather, they represent the population of norms that have achieved some degree of institutional recognition.

The above samples constitute a multi-level flexible norms sample library, encompassing public norms from central to local levels, technical standards formulated by industry associations, and corporate privacy policies directly targeting users. This layered design facilitates examining the performance differences of norms with different sources of authority and varying binding intensities under the Three Pillars framework.

Inclusion and Exclusion Criteria

Inclusion criteria were: (1) the document must be a written norm (excluding oral agreements or informal practices); (2) it must be formulated by a recognized entity (government, association, or corporation); (3) it must address personal information or data privacy; (4) it must be applicable to tourism-related data processing (directly or indirectly). Exclusion criteria were: (1) legally binding regulations (e.g., national laws); (2) purely technical specifications without normative requirements; (3) internal documents not publicly accessible.

The sample includes flexible norms that have been widely cited, formally adopted by industry or government bodies, or publicly endorsed by relevant stakeholders. This serves as a proxy for perceived legitimacy or institutional recognition, not as a claim of empirically verified effectiveness. We do not assert that these norms have been proven effective in reducing privacy breaches or changing behavior; rather, they represent the population of norms that have achieved some degree of de facto acceptance in governance practice. Consequently, the mechanisms identified are common features among recognized norms, not necessarily necessary or sufficient conditions for effectiveness. This caveat addresses the potential circularity of assuming that "representative" norms are effective by definition.

Justification of Sample Relevance to Tourism Big Data

Although not all 12 samples are exclusively tourism-specific, each document is relevant to tourism big data commercialization for the following reasons.

National and provincial standards (Samples 1–4): These documents either directly target tourism big data (Samples 1, 3, 4) or serve as the foundational information security standard widely referenced by tourism platforms (Sample 2, GB/T 35273). For example, online travel agencies (OTAs) such as F corporation explicitly state compliance with GB/T 35273 in their privacy policies.

Industry association standards (Samples 5–8): Sample 5 is a general personal information protection standard but is cited in tourism app compliance reports. Sample 6 addresses urban public transportation data privacy, which directly relates to tourist mobility in city tourism contexts. Sample 7 covers ride-hailing—a core component of tourist ground transportation. Sample 8 targets mobile internet applications, including travel apps.

Corporate policies (Samples 9–11): F corporation is an anonymized online travel agency (OTA) with hotel and flight booking services. X corporation is an anonymized mobility platform offering ride-hailing and chauffeur services. Both process large volumes of tourist personal information. Their names are anonymized to comply with confidentiality requirements while preserving analytical utility.

Self-regulatory covenant (Sample 12): This document addresses platform interoperability, a key issue for tourism data sharing among OTAs, hotels, and airlines. As tourism big data commercialization increasingly involves cross-platform data sharing, interoperability standards have direct implications for data protection governance.

Analytical Strategy: Coding Procedure and Mechanism Identification

Coding Procedure

The analytical procedure consisted of four steps.

Step 1: Operationalization into sub-dimensions. Following Scott (2014), we first operationalized the three pillars into eight specific sub-dimensions, without reference to the eventual three mechanisms. This ensures that mechanism identification emerges from data aggregation, not a priori labeling. (see Table 2)

Table 2. *Operationalization into Sub-dimensions*

Pillar	**Sub-dimension**	**Operational Definition**
Regulative	(R1) Designated enforcement actors	Explicit naming of who implements/enforces
	(R2) Internal enforcement systems	Presence of risk assessment, audits, emergency plans
Normative	(N1) Concept definitions	Clear definitions of key terms (e.g., sensitive information)
	(N2) Systematic institutional design	Full life-cycle coverage (collection to deletion)
	(N3) Responsibility clauses	Division of obligations across actors
Cultural-Cognitive	(C1) Public commitment	Mandated privacy policies, disclosure channels

Pillar	Sub-dimension	Operational Definition
	(C2) Training systems	Regular employee training requirement
	(C3) Social reputation constraints	External certification, blacklists, public reporting

Each sub-dimension was coded as present (1), partially present (0.5—mentioned but without operational detail), or absent (0). A detailed coding manual with examples is available from the author.

Step 2: Coding execution. Each document was coded by the author using a standardized coding sheet recording the eight sub-dimensions (see Appendix A). Coding units were paragraphs or sections. To control interpretive bias, coding rules were documented in a codebook, and all coding was reviewed twice with a two-week interval.

Intra-coder reliability: Three randomly selected samples (Samples 2, 5, and the consolidated F corporate policy) were recoded after two weeks. The percentage agreement was 97% (67 out of 69 sub-dimension scores identical). Disagreements occurred on two items: (1) Sample 5's "social reputation" was initially coded as 0, revised to 0.5 after re-reading a clause on "external audit disclosure"; (2) Consolidated F policy's "internal enforcement systems" was initially 1, revised to 0.5 because the emergency response plan was mentioned but not detailed. All disagreements were resolved through text re-examination.

No second coder was involved; therefore, intercoder reliability is not reported. Transparency is ensured through the provision of the full coding matrix in Appendix A and detailed quotation references

Step 3: Mechanism identification (aggregation). The study identified recurring patterns across documents and grouped them into three mechanism categories based on their dominant pillar and functional logic. The identification was iterative, moving between data and theory. To avoid confirmatory bias, we first coded all documents without reference to the three-mechanism framework, then later mapped emergent categories to the theoretical constructs. We examined patterns of co-occurrence and grouped sub-dimensions into three higher-order mechanisms:

Role-driven mechanism = R1 + (part of) R2 (specifically, the parts about accountability structures)
Content-driven mechanism = N1 + N2 + N3
Enforcement-driven mechanism = C1 + C2 + C3 + (remaining parts of R2 related to monitoring)

This aggregation was guided by theoretical reasoning (Scott's pillars) but also allowed for emergent adjustments. For example, we initially considered separating "training systems" as its own mechanism, but theoretical coherence suggested it belongs to cultural-cognitive internalization.

Step 4: Cross-sample synthesis. The study summarizes the presence of each mechanism across the 12 samples to identify common patterns and variations (see Table

3; full coding in Appendix A).

Analytical Heuristic for Presentation

For analytical clarity, we present the three mechanisms in a sequential order (role → content → enforcement). This ordering is an analytical heuristic, not an empirical claim about temporal sequence or causal dependency. In practice, the mechanisms likely operate iteratively and reinforce each other. The purpose is to organize the presentation of evidence, not to assert strict causality.

Analysis: A Comparative Case Study Based on 12 Samples

Analytical Framework: Representative Design Elements of the Three Pillars of Institutions

(a) Regulative

The regulative dimension primarily examines whether a document can form effective constraints on the regulated objects through clear responsible subjects and institutional design. The executing subject is the starting point of regulation; only by clarifying "who is responsible" can the subsequent implementation and execution of the system be ensured. Internal execution systems are the carriers of regulation, including safety management, risk assessment, emergency response, compliance audits, and other institutional designs, reflecting the systematization and completeness of regulation.

(b) Normative

The normative dimension focuses on the degree of rigor and operability of the document itself. Clear concept definition is the foundation of normativity; only with clear terminology and defined boundaries can ambiguity in understanding and implementation be avoided. Detailed institutional design is the core of normativity. Documents need to systematically stipulate various requirements according to business logic or the data life-cycle, such as specific operational norms for collection, storage, use, sharing, deletion, and other stages. Additionally, a complete normative document should include specific responsibility clauses, covering the division of obligations for different subjects in different scenarios, responsibility constraints for third-party cooperation, and disposal measures after violations, ensuring that every requirement has a clear responsibility attribution and accountability basis. These three types of elements are selected because they reflect the degree of transformation of a document from "abstract principles" to "enforceable rules."

(c) Cultural-Cognitive

The cultural-cognitive dimension examines whether a document can promote the internalization of compliance awareness and the formation of organizational culture through external commitments and internal education. Public commitment is the external manifestation of the cultural-cognitive aspect, including publicizing complaint channels, disclosing algorithm principles, etc., reflecting the organization's respect for users' right to know and choose, and forming the basis for building trust. Training systems are the internal guarantee of the cultural-cognitive aspect, ensuring the formation of inherent compliance motivation by incorporating compliance requirements into new employee induction, management promotion, and annual training for all staff. Social reputation is the outcome feedback of the cultural-cognitive aspect, including

methods like self-discipline compliance evaluation, signing industry conventions, and publicizing violative behaviors, forming external supervision and reputational constraint mechanisms. These three types of elements constitute a cultural-cognitive system of "building external trust + cultivating internal awareness + accepting social supervision."

Summary of Mechanism Presence

Summary of Mechanisms Presence Across 11 Independent Normative Sources (see Table 3)

Table 3. *Summary of Mechanism*

Mechanisms	**Core Function**	**Number of Sources (out of 11)**	**Representative Source(s)**
Role-driven	Designates enforcement actors and accountability	11	Samples 2, 5, 8, 10
Content-driven	Operationalizes abstract principles into verifiable rules	11	Samples 2, 5, 6
Enforcement-driven	Transmits pressure via training, reputation, complaints	9	Samples 2, 4, 5, 8, 10

Note: "Presence" indicates at least one key sub-dimension of the mechanism is coded as 1 or 0.5. Detailed sub-dimension scores are in Appendix A.(The original detailed coding table for 12 documents is now replaced by a compact representation in Appendix A, which includes both the eight sub-dimensions and the aggregated mechanisms.)

Analysis of the Internal Mechanisms of Flexible Norms

The findings indicate that flexible governance norms can effectively constrain participants through sophisticated mechanisms, even without the coercive force of rigid rules. This is particularly evident in the commercialization of tourism big data. Through a systematic analysis of flexible norms formulated by different entities, we find that the regulative pillar reveals the configuration of subjects regarding "who enforces," the normative pillar clarifies the rule framework concerning "what is enforced," and the cultural-cognitive pillar points to the value identification of "how to internalize." This set of norms constitutes a distinctive implementation safeguard system, namely the role-driven mechanism, the content-driven mechanism, and the enforcement-driven mechanism.

Before presenting the empirical evidence for each mechanism, we provide precise definitions and specify how they relate to—but differ from—Scott's three pillars.

Role-driven mechanism refers to the institutional design that assigns explicit governance functions (initiator, enforcer, supervisor) to specific actors. It primarily activates the regulative pillar by answering "who acts" but goes beyond Scott's framework by specifying the organizational embedding of enforcement (e.g., dedicated

data protection officers, compliance committees, and external supervisory bodies).

Content-driven mechanism refers to the translation of abstract principles into operational rules (e.g., data classification, scenario-based indicators, verifiable requirements, and responsibility clauses). It primarily activates the normative pillar by specifying "what is appropriate action" but adds an incentive-compatibility layer that Scott's framework treats less explicitly (e.g., linking compliance to market advantages or cost savings).

Enforcement-driven mechanism refers to the transmission of internal and external pressure through public commitments, training systems, and reputation constraints. It primarily activates the cultural-cognitive pillar by shaping "what is taken for granted" but introduces explicit pressure channels (e.g., complaint mechanisms, supplier audits, industry blacklists) that Scott describes more diffusely.

Causal sequence (analytical, not strictly linear): The three mechanisms operate in a sequential logic for analytical clarity: role-driven mechanisms establish organizational carriers (→ who enforces); content-driven mechanisms make compliance instrumentally rational (→ why comply); enforcement-driven mechanisms internalize norms into habits and reputation (→ how compliance is sustained). While presented sequentially, in practice these mechanisms are iterative and mutually reinforcing. This sequence moves from structural design → rational choice → cultural embedding (See Table 4).

Table 4. *Mechanisms*

Mechanisms In/Ex	Internal Mechanisms	External Mechanisms
Role-Driven Mechanisms	Initiators and Implementers	Public Actors
Content-Driven Mechanisms	Internal Benefit-Cost Alignment Rule Design, etc.	Standardization & Certification
Enforcement-Driven Mechanisms	Public Commitments and Target Guarantee Measures	Pressure Transmission Measures

Unlike rigid norms, which rely primarily on the regulative pillar (coercive sanctions), flexible norms activate all three pillars but shift the center of gravity toward the normative and cultural-cognitive pillars. The three mechanisms identified in this study reflect this shift: role-driven mechanisms compensate for the absence of state enforcement by embedding accountability within organizations; content-driven mechanisms transform abstract principles into actionable rules, reducing ambiguity that would otherwise require judicial interpretation; enforcement-driven mechanisms leverage reputation and internalized norms rather than external sanctions. This configuration is not exclusive to flexible norms, but its relative weighting differs systematically from that of hard law.

Role-Driven Mechanism: Clarifying the Functional Configuration of Governance Subjects

The role-driven mechanism corresponds to the Implementing Entities and part of the Internal Systems within the regulative pillar. Its core lies in transforming flexible norms into an operable governance structure by defining the functions and responsibilities of different participants.

First is the functional configuration of initiators and enforcers. National Standard GB/T 35273 (Sample 2) requires large-scale processors to establish a dedicated personal information protection officer. Sample 5 further stipulates that the legal representative bears overall responsibility, while the Compliance Management Guidelines for User Rights Protection in Mobile Internet Application Services (2025) (Sample 8) specifies the three-level responsibilities of the board of directors, compliance management officers, and business departments. This internal role division ensures that flexible norms have clear "owners" and "promoters" within the organization. For example, the "dedicated personal information protection department" and "personal information protection officer" established in F's privacy policy (Sample 9, consolidated), as well as the "specialized responsible team" mentioned in X's guide (Sample 10), provide organizational support for the implementation of flexible norms.

Second is the external constraint imposed by supervisory committees. The Self-Regulatory Covenant (Sample 12) designates the Internet Society of China as the convention enforcement body responsible for supervision and dispute mediation. GB/T 35273 (Sample 2) and T/CSAS 0016-2025 (Sample 5) introduce third-party certification and compliance audit mechanisms. These external supervisory bodies conduct independent assessments and public disclosures of participants' compliance performance through methods such as issuing reports, organizing evaluations, and accepting complaints, thereby forming an effective check on internal enforcers.

Content-Driven Mechanism: Integrating Rule Design and External Endorsement

The content-driven mechanism integrates the Concept Definitions, System Design, and Responsibility Clauses from the normative pillar, as well as the Public Commitments from the cultural-cognitive pillar. Its core lies in making compliance with flexible norms a rational choice for participants through well-structured rule design.

On one hand, it involves the design of internal interest-cost trade-off rules. T/CSAS 0016-2025 (Sample 5) introduces international standard certifications and advanced technologies, enabling compliant entities to gain technological leadership and market competitive advantages. T/CCTAS 11-2020 (Sample 7) incorporates security performance into assessments and links it to rewards and penalties. DB14/T 3539-2025 (Sample 4) establishes an employee privacy protection evaluation mechanism. X's guideline (Sample 10) requires background checks and confidentiality agreement constraints for employees who may access sensitive information. These designs internalize compliance costs, make violation costs explicit, and guide participants to proactively choose compliance based on interest trade-offs.

On the other hand, it involves external endorsement through standardization and certification. GB/T 35273-2020 (Sample 2), as a national standard, serves as the basis for national-level "personal information protection certification" and certification for cross-border personal information transfers. Sample 7 requires third-party network and information security assessments and the implementation of security operation compliance evaluations. T/CSAS 0016-2025 (Sample 5) sets mandatory compliance audit cycles

(2/3/4 years) based on processing scale. These external certification mechanisms provide objective and verifiable proof of compliance with flexible norms, reducing information asymmetry among transaction parties and enhancing stakeholder trust.

Enforcement-Driven Mechanism: Ensuring the Implementation of Governance Requirements

The enforcement-driven mechanism corresponds to the Public Commitments, Training Systems, and Social Reputation in the cultural-cognitive pillar, as well as the Internal Systems in the regulative pillar. Its core lies in translating flexible norms from written requirements into actual practices through the transmission of internal and external pressure.

First, public commitments and target assurance mechanisms establish a reputation-based constraint mechanism. GB/T 35273-2020 (Sample 2) mandates the formulation and public release of personal information protection policies. T/CSAS 0016-2025 (Sample 5) requires apps to display privacy policies via pop-up notifications when first launched. Corporate policies (Samples 9 and 10) explicitly display contact information for the personal information protection officer in prominent locations. Such public commitments place an organization‘s compliance performance under public scrutiny, where violations may lead to reputational damage and user attrition. The Self-Regulatory Covenant (Sample 12) goes further by requiring the enforcement body to periodically publish lists of entities joining or withdrawing from the convention, thereby reinforcing reputational constraints within industry self-regulation.

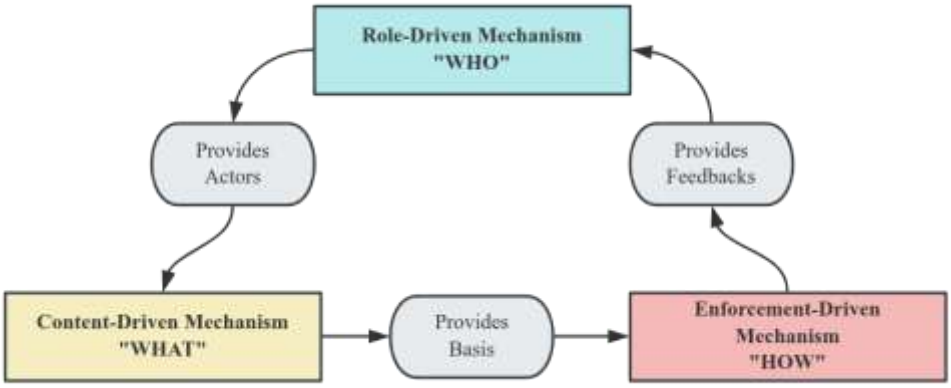
Second, training systems enable the internalization and perpetuation of norms. GB/T 35273-2020 (Sample 2) requires at least one specialized training session and assessment annually. T/CSAS 0016-2025 (Sample 5) stipulates that new employees complete training within one month of hire and retain assessment records. The Mobile Internet Application Guidelines (Sample 8) requires the establishment of training mechanisms integrated into promotion assessments. Corporate guidelines (Samples 9 and 10) explicitly mention regular security and privacy protection training programs. This systematic training transforms flexible norms from external constraints into employees' internal awareness and behavioral habits, ensuring the intergenerational transmission and sustained implementation of governance requirements.

Third, pressure transmission channels are established to transform external regulatory pressure into internal governance impetus. GB/T 35273-2020 (Sample 2) requires the establishment of complaint management mechanisms with responses within 15 days. The Mobile Internet Application Guidelines (Sample 8) mandates convenient complaint reporting channels and customer service hotlines with clearly defined response timelines, as do Consolidated F's policies (Sample 9). These channels facilitate the exercise of oversight by external individuals, aggregating dispersed individual concerns into sustained organizational pressure. DB14/T 3539-2025 (Sample 4) and T/CCTAS 11-2020 (Sample 7) extend this pressure transmission to the supply chain by requiring privacy protection clauses in supplier contracts, regular audits, and termination of partnerships in cases of non-compliance, thereby extending the effectiveness of flexible norms along the industrial chain.

In summary, the role-driven mechanism addresses the organizational carrier issue of flexible norms by clarifying "who executes," the content-driven mechanism resolves the incentive compatibility issue by appropriately designing "what to execute," and the enforcement-driven mechanism tackles the practical transformation issue by transmitting pressure on "how to execute." These three mechanisms are mutually reinforcing and

progressive, collectively forming the institutional foundation for the intended effective operation of flexible governance norms. This finding reveals that flexible norms are designed to achieve effective governance outcomes even in the absence of coercive force through sophisticated mechanism design, providing a practical operational path for the protection of sensitive personal information in the commercial application of tourism big data. (See Figures 1)

Figure 1. *The Interaction of Three Mechanisms*



Summary

This finding reveals that flexible norms are associated with a governance design that aims for effective governance outcomes even in the absence of coercive force through sophisticated mechanism design, providing an actionable operational path for the protection of sensitive personal information in the commercial application of tourism big data.

Conclusion

Main Findings

This study focuses on the intended effectiveness of flexible norms as reflected in their institutional design for governing sensitive personal information within the commercialization of tourism big data. It aims to answer the question: In the absence of state coercive enforcement, how are flexible norms designed to generate de facto binding force on participants? By introducing W. Richard Scott's three pillars of institutions, the research constructs an analytical framework that transcends legal centralism. Employing a structured document analysis with comparative sampling logic, it systematically examines 12 representative flexible norms texts, including national/ provincial guidelines, industry standards, corporate policies, and self-regulatory covenants.

The study finds that the design effectiveness of flexible norms rests not on any single mechanism but on the interplay of three synergistic drivers. The role-driven mechanism provides organizational carriers through clear accountability assignment. The content-driven mechanism translates abstract principles into actionable rules—such as data classification, graded safeguards, and verifiable indicators—making compliance a rational choice. The enforcement-driven mechanism leverages public

commitments, training, and reputational constraints to embed written requirements into organizational routines and shared industry beliefs. These mechanisms are nested and mutually reinforcing, enabling flexible norms, even without coercive backing, to achieve intended effectiveness through organizational embeddedness, incentive alignment, and social reputation. The findings are based on textual evidence; empirical validation of behavioral effects remains for future research.

Existing research on soft law has identified broad influence mechanisms such as reputation, market pressure, and community identity (Abbott & Snidal, 2000; Shelton, 2000). However, these studies remain at a high level of abstraction, treating soft law as a monolithic category. This study advances the literature by specifying the institutional micro-foundations through which these broad mechanisms are operationalized in written norms. Specifically, we show how reputation constraints are translated into concrete design elements; how market pressure is channeled through certification and compliance audits; and how community identity is cultivated through training systems and shared responsibility clauses. By bridging the gap between abstract soft law theory and concrete norm design, this study provides a more actionable framework for governance practitioners and a more precise vocabulary for future empirical testing.

Critical Discussion: Limits and Alternative Explanations

While this study identifies design mechanisms that may support effectiveness, several limitations inherent to flexible governance must be acknowledged.

First, symbolic compliance and privacy washing. Flexible norms rely on self-reporting and public commitments, creating risks of "ethics washing" (Bietti 2020) where organizations adopt the language of compliance without substantive implementation. Only a few samples (e.g., Samples 2 and 5) mention independent audits, but none specify sanctions for non-compliance. This leaves room for performative compliance.

Second, uneven bargaining power. Flexible norms presume voluntary participation, but tourism platforms often impose terms unilaterally on users, drivers, and small hotels. The "consent" obtained may reflect power asymmetry rather than genuine agreement. None of the 12 samples address this power imbalance.

Third, weak independent oversight. Although three samples (Samples 2, 5, 12) mention third-party certification or external enforcement bodies, none provide detailed sanction mechanisms for false reporting. This raises questions about accountability.

Fourth, commercialization-privacy tension. Flexible norms cannot resolve the fundamental conflict between data monetization and privacy protection. None of the samples restrict profit-driven data use beyond legal minima. Thus, flexible norms may coexist with persistent privacy risks.

These limitations do not invalidate the study's findings but suggest that flexible norms are most effective when embedded in a broader governance ecosystem that includes independent oversight, user redress mechanisms, and alignment with hard law standards. Future research should examine not only design mechanisms but also enforcement realities, including audit practices, complaint outcomes, and platform responses to user dissent.

Fifth, sample composition and case selection. This study includes several documents that are not exclusively tourism-specific (e.g., general personal information standards, public transportation data standards, platform interoperability covenants). While we justified their relevance in the previous Section (*Justification of Sample Relevance to Tourism Big Data*), the inclusion of non-tourism-specific norms may dilute the contextual

specificity of findings. Readers should exercise caution when generalizing conclusions to the tourism sector exclusively. Moreover, this study adopted maximum variation sampling without including negative cases (i.e., flexible norms that have demonstrably failed to achieve effectiveness). Consequently, the mechanisms identified are common features across the selected samples, but we cannot claim they are sufficient or necessary conditions for effectiveness. Future research should include comparative cases of ineffective norms to strengthen causal inference.

Limitations and Future Research

Although this study reveals the internal logic of how flexible norms are designed to achieve intended effectiveness through structured document analysis, several limitations exist.

First, static text focus. The analysis is primarily based on a static interpretation of texts, lacking direct empirical observation of dynamic implementation processes, the actual degree of participant compliance, and long-term effects. For instance, whether corporations truly implement training systems or whether user complaints receive effective responses requires empirical testing.

Second, sample scope and generalizability. While the sample strives for diverse types, it predominantly consists of Chinese domestic regulations and does not exhaust all emerging governance forms. Moreover, as noted in the *Section: Critical Discussion: Limits and Alternative Explanations*, this study includes several non-tourism-specific documents and lacks negative cases. The generalizability of the conclusions needs verification in broader cultural, institutional, and sectoral contexts.

Third, mechanism interaction vs. isolation. The study treats the three mechanisms as complementary and presents them in an analytical heuristic sequence. It does not examine conditions under which one mechanism dominates or backfires, nor does it empirically test interaction effects.

Fourth, relationship with hard law and technical standards. The study focuses on the mechanism design of flexible norms themselves, with limited discussion on their interactive relationships with other governance tools like rigid norms and technical standards—a critical issue unavoidable in a complex governance ecosystem.

In the future, the research directions will focus on: (a) conducting in-depth field investigations or questionnaire surveys to track the adoption, implementation, and effects of flexible norms within specific organizations, thereby validating and refining the mechanism model proposed in this study. (b) Employing qualitative comparative analysis (QCA) or fine-grained comparative case analysis to systematically compare flexible norms across types (e.g., national standards vs. corporate policies) and include negative cases to identify necessary and sufficient conditions for effectiveness. (c) Undertaking cross-national comparative research to test whether the mechanisms identified in China's context operate similarly in other legal and cultural settings. (d) Examining the interplay between flexible norms, hard law, and technical standards to understand how hybrid governance systems can be optimized for sensitive personal information protection.

Further, to validate the intended effectiveness claims, future research could adopt the following empirical strategies: (1) a survey measuring organizational compliance behaviors across firms that have adopted flexible norms with different mechanism configurations; (2) a difference-in-differences design comparing data breach incidents before and after the adoption of a specific flexible norm; (3) a qualitative comparative

analysis (QCA) with conditions such as presence/absence of role-driven mechanism, content-driven mechanism, and enforcement-driven mechanism, and outcome = demonstrable compliance.

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Appendix A. *Two-Level Coding Matrix*

The table below presents the coding at two levels: first the eight sub-dimensions (R1, R2, N1, N2, N3, C1, C2, C3) as per operationalization, then the aggregated mechanisms (Role, Content, Enforcement). Scores: 1 = present, 0.5 = partially present, 0 = absent.

Source	R1	R2	N1	N2	N3	C1	C2	C3	Role (R1+R2)*	Content (N1+N2+N3)*	Enforcement (C1+C2+C3+R2 monitoring)*
Sample 1	1	1	1	1	1	0.5	0.5	0	1	1	0.5
Sample 2	1	1	1	1	1	1	1	0.5	1	1	1
Sample 3	1	1	1	1	1	0.5	0.5	0	1	1	0.5
Sample 4	0.5	1	0.5	0.5	0	0.5	1	0	0.5	0.5	1
Sample 5	1	1	1	1	1	1	1	0.5	1	1	1
Sample 6	0.5	0.5	1	1	0	0.5	0	0	0.5	1	0
Sample 7	1	1	1	1	1	0.5	0.5	0	1	1	0.5
Sample 8	1	1	1	1	1	1	1	0.5	1	1	1

Source	R1	R2	N1	N2	N3	C1	C2	C3	Role (R1+R2)*	Content (N1+N2+N3)*	Enforcement (C1+C2+C3+R2 monitoring)*
Sample 9 (Consolidated F)	1	0.5	1	1	1	1	0.5	0	1	1	0.5
Sample 10 (X)	1	1	1	1	1	1	0.5	0	1	1	0.5
Sample 12	1	1	0.5	0.5	0.5	0.5	0	1	1	0.5	1

Note on aggregation:

The aggregation rules are based on theoretical reasoning: reputational constraints (C3) are considered sufficient for enforcement-driven mechanism even without training or public commitment because social sanctions can operate independently; conversely, public commitment (C1) alone is deemed insufficient without monitoring or reputation effects.

Role-driven mechanism = 1 if R1 ≥ 0.5 AND at least one accountability-related element in R2 (e.g., designated compliance officer, internal audit requirement) ≥ 0.5. Rationale: A role mechanism requires both a designated actor (R1) and an operational accountability structure (R2).

Content-driven mechanism = 1 if the average of (N1, N2, N3) ≥ 0.5. Rationale: Content operates as a package; a norm lacking concept definitions (N1) or responsibility clauses (N3) but with strong system design (N2) still has partial content strength. Equal weighting is adopted for simplicity; future research could refine weights based on expert elicitation.

Enforcement-driven mechanism = 1 if (average of C1, C2, C3 ≥ 0.5) OR (C3 = 1). Rationale for C3 weighting: Reputational constraints (C3), such as public blacklists or mandatory disclosure of violations, can operate independently without training (C2) or public commitment (C1) because social sanctions (e.g., consumer boycotts, partner distrust) are directly triggered by public naming. Conversely, public commitment alone (C1=1, C2=0, C3=0) is deemed insufficient without monitoring or reputation effects. This weighting is theoretically justified (Shelton, 2000) and should be empirically tested in future research.