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A Data-Informed Governance Model for Enhancing Institutional Decision-Making and Effectiveness at Prince Sattam bin Abdulaziz University

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ABSTRACT: Universities now possess more data than ever, yet greater data volume does not automatically produce better decisions. The decisive issue is governance: who defines institutional questions, which data are trusted, how evidence is interpreted, how professional judgement enters deliberation and whether decisions are later evaluated. This study develops a data-informed governance model tailored to Prince Sattam bin Abdulaziz University (PSAU). It combines an integrative review of research on higher education governance, data governance, analytics, quality assurance and organisational learning with a qualitative analysis of public PSAU strategic and organisational documents current to 21 August 2026. The analysis identifies important enabling assets, including a strategic commitment to quality and continuous development, a Data and AI Office, a Business Intelligence Unit, a Statistical Studies and Decision Support Administration, an Institutional Excellence Unit, open-data commitments, enterprise-architecture work and a 2026-2028 digital transformation strategy. Public documents, however, do not demonstrate an end-to-end routine linking priority questions, shared definitions, validated evidence, deliberation, implementation and learning. The proposed PSAU Data-Informed Governance Model addresses this coordination challenge through six stages: framing the decision, assembling trusted evidence, analysing and contextualising findings, deliberating and deciding, implementing and monitoring action, and evaluating outcomes. Decision rights, stewardship, privacy, ethical review, data literacy and change leadership operate across the cycle. The term data-informed is deliberate: university decisions require contextual knowledge, academic judgement and attention to values alongside quantitative evidence. A phased roadmap, governance-role matrix and evaluation framework are provided.

1. INTRODUCTION

Higher education institutions operate amid expanded accountability, competition, technological change and expectations that institutional choices should be connected to evidence. Universities are asked to improve student success, align programmes with labour-market needs, strengthen research, use public resources responsibly, meet accreditation requirements and contribute to national development. Each responsibility generates data through student, learning, research, finance, human-resource and quality systems. The resulting volume can create an impression that better decisions will follow naturally. In practice, the relationship is neither automatic nor linear.

Data become useful only when people agree on their meaning, trust their quality, understand their limitations and know who must act. A dashboard may show declining course completion, but it cannot establish whether the cause lies in admission patterns, curriculum, assessment, student support, scheduling or a temporary disruption. Nor can an algorithm determine the acceptable balance among quality, equity, cost and academic autonomy. Data can narrow uncertainty and challenge intuition,

but interpretation and judgement remain unavoidable. The term data-informed decision-making therefore better describes a disciplined use of evidence than the stronger implication that numbers should dictate action.

The governance question is broader than acquiring analytical software. It concerns decision rights, stewardship, definitions, quality, access, privacy, capability, culture and the routines through which evidence becomes action. Khatri and Brown (2010) ask what decisions must be made about data and who is accountable for them. Weber et al. (2009) add that governance must fit an organisation's structure and decision culture. Contextual fit is especially important in universities because authority is distributed across councils, vice presidencies, colleges, deanships, departments and professional units, while academic work depends on collegial judgement as well as administrative coordination.

PSAU offers a timely setting for such a model. Its strategic plan emphasises academic quality, programme relevance, research, community service, innovation and continuous development (Prince Sattam bin Abdulaziz University [PSAU], 2026a). The organisational guide identifies a Business Intelligence Unit, a Statistical Studies and Decision Support Administration, a Deanship of Development and Quality and an Institutional Excellence Unit (PSAU, 2026b). The Data and AI Office links data quality, governance, protection and literacy to decision support (PSAU, 2026c), while open-data, enterprise-architecture and digital-transformation initiatives add further enabling capacity (PSAU, 2026d, 2026e, 2026f). Because these capabilities are distributed, a common evidence-to-action process is needed to prevent duplication, conflicting indicators and unclear accountability.

This article develops a conceptual governance model for that purpose. It does not claim to measure PSAU's current performance or report unavailable internal data. An integrative literature review and qualitative document analysis are used to identify strengths, requirements and a feasible architecture. The central proposition is that institutional effectiveness improves when data governance is joined to decision governance: strategic questions are framed clearly, evidence is interpreted with context, decisions are recorded, implementation is owned and outcomes are reviewed.

2. CONCEPTUAL FOUNDATIONS

Contemporary higher education governance is commonly hybrid. Universities may receive operational autonomy while facing stronger performance measurement, quality assurance and public accountability. Comparative research shows combinations of regulation, evaluation, performance funding and strategic steering rather than a uniform move from state control to independence (Capano & Pritoni, 2020; Capano, 2022). Universities also increasingly act as organisational actors with their own priorities and strategic position (Zapp et al., 2021). Data support that actorhood because goals, resources and results cannot be governed credibly without an institutional view of activity.

Performance data are not neutral descriptions. Indicators select aspects of activity, establish categories and make some outcomes more visible than others. The expansion of data may transform governance through greater volume, speed and granularity, but it also risks metric proliferation, short-term target chasing and decontextualised comparison (Beerens, 2022). Leiber (2022) therefore connects performance-data governance to the management of learning and teaching, while Harvey (2024) distinguishes compliance-oriented assurance from a culture of improvement. Measurement should serve inquiry and learning, not become an end in itself.

Data governance supplies the rules and accountabilities that make evidence dependable. It covers decision rights, ownership, stewardship, standards, metadata, access, security, quality and enforcement (Khatri & Brown, 2010; Koltay, 2016). A data owner is accountable for the meaning and authorised use of a domain; a steward maintains definitions, quality rules and issue resolution; technical custodians operate platforms and controls. In a university, fields such as grades, research outputs, graduate outcomes or risk flags embody academic and ethical assumptions. Their definition and interpretation must therefore involve relevant academic and professional communities.

Higher education studies show uneven formalisation. Jim and Chang (2018) found varied public data-governance arrangements, while Mahroeian and Daniel (2021) found that universities valued analytics but often used them for operational monitoring rather than strategic or educational transformation. Shared definitions, visible accountability, staff capacity and routines connecting data to priorities remain common challenges. Technology alone does not resolve them.

Analytical capability combines suitable systems, high-quality information, skilled people and practices that connect analysis to action. Business-intelligence success depends on system maturity and an analytical culture (Popovič et al., 2012). Seddon et al.

(2017) describe an analyse-insight-decision-action process, highlighting the organisational links between a correct analysis and an implemented choice. In academic settings, collaborative interpretation and local teaching cultures shape whether faculty use evidence constructively (Hora et al., 2017). A sophisticated system may have little influence when users distrust it, lack time to interpret it or experience it mainly as surveillance.

Learning-analytics research reinforces this caution. Reviews identify promising applications for student support but limited large-scale evidence and persistent implementation challenges (Ifenthaler & Yau, 2020). Guzmán-Valenzuela et al. (2021) warn that the field can emphasise analytics more than learning, and Ifenthaler et al. (2021) call for stronger links to educational processes. Macfadyen and Dawson (2012) show that abundant learning data can still fail to shape strategy when organisational routines are misaligned. Dashboards and prediction should therefore sit within governance rather than be treated as self-executing solutions.

Ethics and legitimacy are integral. Higher education data can expose sensitive information and predictive models may reproduce inequality or classify students in consequential ways. Jones (2019) argues for informed consent and autonomy, while Slade and Prinsloo (2013) emphasise transparency and responsibility. Saudi institutional arrangements must also align with national privacy and data-governance requirements; the National Data Governance Platform links governance, compliance and individual rights (Saudi Data and Artificial Intelligence Authority [SDAIA], n.d.). Ethical assurance belongs throughout the cycle, not at its end.

Institutional effectiveness should not be reduced to indicator maximisation. A university may improve a reported rate while weakening the conditions that give the rate educational meaning. Faster completion, for example, is desirable only when standards, learning and student wellbeing are protected. A sound evidence system therefore connects measures to an explicit theory of change: which activity is expected to influence which outcome, through what mechanism, for whom and under what conditions. It also distinguishes outputs from outcomes and outcomes from longer-term public value. This discipline makes indicators more interpretable and discourages the assumption that movement in a number is itself proof of improvement.

Quality culture provides the social setting for this work. When quality assurance is experienced mainly as periodic documentation for external review, staff may collect evidence defensively and abandon it once the review ends. When it is integrated with routine inquiry, evidence becomes part of programme conversations, resource choices and professional reflection. Data-informed governance should consequently reuse evidence across strategic planning, accreditation and local improvement rather than create separate reporting universes. The goal is a single governed evidence base capable of supporting different legitimate questions.

The literature yields five design principles: specify decision rights; treat semantic agreement and provenance as parts of quality; connect insight to action through explicit routines; combine evidence with context and academic judgement; and protect privacy, fairness and the possibility of challenge. These principles ground a model that is data-informed, participatory and learning-oriented.

3. SAUDI HIGHER EDUCATION AND THE PSAU INSTITUTIONAL CONTEXT

The Saudi literature reviewed for this study shows sustained attention to governance, accreditation, leadership and institutional effectiveness. Studies call for clearer frameworks, decentralisation, transparency, participation, accountability and leadership development, while reporting that governance, quality assurance, benchmarking and internal review are often perceived at moderate rather than consistently high levels (Al-Fraih, 2019; Al-Ramthi, 2019; Al-Shammari, 2021; Al-Maslat, 2023). Research on autonomy argues that administrative, financial and academic discretion must be accompanied by governance and evaluation (Al-Ghamdi & Al-Zahrani, 2022), and more recent work connects governance with administrative excellence and beneficiary satisfaction (Al-Zahrani & Al-Mustadi, 2024).

Much of this scholarship relies on cross-sectional surveys of application, barriers or importance. It often treats governance, leadership, quality culture, accreditation and transformation as separate variables and offers less guidance on how information should move across boundaries, become a decision record and support later evaluation. The gap is therefore not a lack of advocacy for governance, but the absence of an operating model that joins governance principles to stewardship, analysis, deliberation, execution and learning.

PSAU's public documents suggest readiness for such integration. Its strategic plan connects academic quality with labour-market alignment, student-centred education, research, innovation and continuous improvement (PSAU, 2026a). Its

organisational guide distributes relevant capabilities across the Business Intelligence Unit, Deanship of Development and Quality, Statistical Studies and Decision Support Administration and Institutional Excellence Unit (PSAU, 2026b). This distribution can place evidence close to decision domains, provided common standards and escalation routes are established.

The Data and AI Office provides an institutional anchor through objectives covering quality, integrity, protection, governance, artificial intelligence and data literacy (PSAU, 2026c). Open-data commitments link reliable and reusable datasets to transparency, research and decision support (PSAU, 2026d). Enterprise-architecture work seeks a unified platform for organisational information, while the 2026-2028 digital transformation strategy connects data and AI with governance, cybersecurity, business continuity and performance monitoring (PSAU, 2026e, 2026f).

The organisational fit is important. A university-wide model must respect formal authority while enabling lateral collaboration among units that hold different parts of the evidence. Decisions about a programme, for instance, may require admissions data, course outcomes, student feedback, staffing, cost, graduate destinations and external demand. No single office owns the complete picture. The model must therefore make cross-unit contribution normal, while ensuring that one authorised decision owner remains accountable for the final choice and its implementation.

These commitments do not prove that every internal process is mature. Public webpages describe mandates and initiatives, not workflow performance or dataset quality. They nevertheless show that PSAU already names most capabilities required for data-informed governance. The design challenge is to connect them through a common pathway from question to evidence, decision, action and learning.

4. RESEARCH PURPOSE AND QUESTIONS

The purpose of this study is to develop a context-sensitive data-informed governance model that can strengthen the quality, transparency and follow-through of institutional decision-making at PSAU. Institutional effectiveness is understood here as the university's capacity to translate its mission and strategic priorities into coordinated action, demonstrable outcomes and continuous improvement. The study does not equate effectiveness with a single ranking or indicator. It treats effectiveness as a multidimensional achievement involving educational quality, student success, research and innovation, resource stewardship, service performance, compliance, stakeholder trust and organisational learning.

RQ1. What governance and data-related capabilities are visible in PSAU's public strategic and organisational architecture?

RQ2. What design requirements emerge from research on higher education governance, data governance, analytics, quality assurance and data culture?

RQ3. How can these requirements and institutional capabilities be integrated into an implementable governance model that improves decision quality and institutional effectiveness without reducing academic judgement to metric compliance?

5. METHODOLOGY

The study uses a conceptual and design-oriented methodology. Two evidence streams were combined. The first was an integrative review of peer-reviewed literature on university governance, data governance, data-informed decision-making, institutional analytics, quality assurance, organisational learning and ethical data use. Seminal governance contributions were retained where they continue to define core constructs, while recent higher education studies were used to examine contemporary opportunities and risks. Saudi studies contained in the source framework were reviewed to preserve the national research context and to identify recurring concerns about participation, transparency, autonomy, accreditation, benchmarking and institutional performance.

The second evidence stream was a qualitative document analysis of six categories of official PSAU material available on the university's public website as of 21 August 2026: the strategic plan, organisational structure, Data and AI Office mandate, open-data statement, digital transformation strategy announcement and enterprise-architecture project description. The documents were read for explicit statements about strategic priorities, organisational authority, data quality, decision support, digital integration, performance monitoring, transparency, privacy, quality assurance and continuous improvement. Official national information on the Saudi data-governance platform was also consulted to position privacy and compliance as cross-cutting requirements.

Analysis proceeded in three stages. First, the literature and documents were coded deductively using eight categories: decision rights, stewardship, data quality, integration, analytical capability, deliberation, ethical assurance and organisational learning. Second, the analysis identified where PSAU's public architecture already supplied an institutional home for these functions and where coordination requirements remained implicit. Third, the categories were synthesised into an evidence-to-action cycle and a role matrix. The model was assessed conceptually against four criteria: strategic alignment, accountability, feasibility within the published structure and protection against common failures such as dashboard proliferation, metric fixation, ambiguous ownership and weak post-decision evaluation.

Documents were included only when they were issued by PSAU or an official Saudi authority and directly described strategy, organisational responsibilities, data, digital transformation or decision support. The literature was selected for conceptual relevance and source credibility rather than assembled as an exhaustive systematic review. During synthesis, an institutional feature was treated as an existing capability only when it was explicitly named in a public document. Where the documents did not describe an end-to-end process, the analysis framed coordination needs as design inferences rather than claims of deficiency. This distinction protects the study from confusing public silence with organisational absence.

Because only public documents were analysed, the study makes no claim about confidential systems, actual data maturity, staff perceptions or the effectiveness of current practices. The proposed architecture is a reasoned design proposition, not an empirically validated intervention. Its value lies in making assumptions, responsibilities and implementation tests explicit so that PSAU can subsequently examine, pilot and revise the model with internal stakeholders.

6. FINDINGS: INSTITUTIONAL READINESS AND DESIGN REQUIREMENTS

The analysis indicates a favourable but distributed foundation. PSAU's priorities offer substantive decision domains around which evidence can be organised: academic quality, programme relevance, student-centred education, research, innovation, community contribution, digital development and institutional excellence. Data governance should begin with these strategic questions rather than with whichever datasets happen to be available.

Specialised units provide complementary capabilities. The Data and AI Office can lead policy, definitions, stewardship and quality. The Business Intelligence Unit can support governed dashboards and recurring reporting. The Statistical Studies and Decision Support Administration can conduct deeper analysis and evaluation. Quality and institutional-excellence functions can link evidence to accreditation and improvement, while IT, enterprise architecture and cybersecurity can support integration, custody and control. Colleges and administrative units remain essential because they create data, understand context and implement decisions.

Distribution also creates risk. Without a shared model, units may use different definitions, produce parallel reports or assign data problems to technical teams that do not own the underlying process. Completion, research productivity or satisfaction can vary according to population, period, inclusion rules and source. A university business glossary, data catalogue and named owners and stewards are therefore foundational.

Reporting must also be distinguished from decision support. Dashboards provide awareness but rarely explain causes or specify action. Consequential decisions should require an evidence brief stating the question, strategic relevance, sources, definitions, limitations, disaggregated findings, alternative explanations, stakeholder perspectives, options, risks and confidence. This turns analytics into an accountable argument and creates a record for later review.

Structured deliberation is required because university decisions involve legitimate tensions: access and selectivity, standardisation and disciplinary difference, efficiency and educational richness, or rapid intervention and due process. Evidence must be reviewed by people who understand academic practice, student experience, finance, regulation and implementation. The forum should be able to question assumptions, request analysis, record dissent and explain the selected option.

Interoperability is another requirement. Strategic questions routinely cross systems, yet integration can be undermined by different identifiers, academic calendars, organisational codes or historical definitions. Enterprise architecture should therefore be linked to information architecture: common entities, reference data and time periods need governed definitions, and data lineage should show how an indicator travels from an operational source to an executive report. Integration should not mean indiscriminate centralisation. Sensitive detail can remain in source systems while authorised analytical views provide the minimum information needed for a decision.

Evidence should also be proportionate to consequence. A low-risk operational adjustment may be supported by a simple trend and manager review, whereas a decision affecting admission, programme closure, staff workload or student opportunity requires stronger validation, broader consultation and ethical scrutiny. This principle prevents governance from becoming so heavy that routine work stalls, while ensuring that high-impact decisions receive the attention they deserve. It also gives the proposed council a practical basis for determining which matters need university-level review.

Finally, accountability must close the loop. Each decision needs an owner, milestones, leading and lagging indicators, risks and a scheduled evaluation. Launching an advising initiative is an activity; improved progression without wider subgroup gaps is an outcome. Trust is equally productive: clear purposes, proportionate access, privacy review, correction mechanisms and role-specific data literacy encourage staff to report errors and share context rather than comply defensively.

Table 1. PSAU documentary evidence and implications for model design

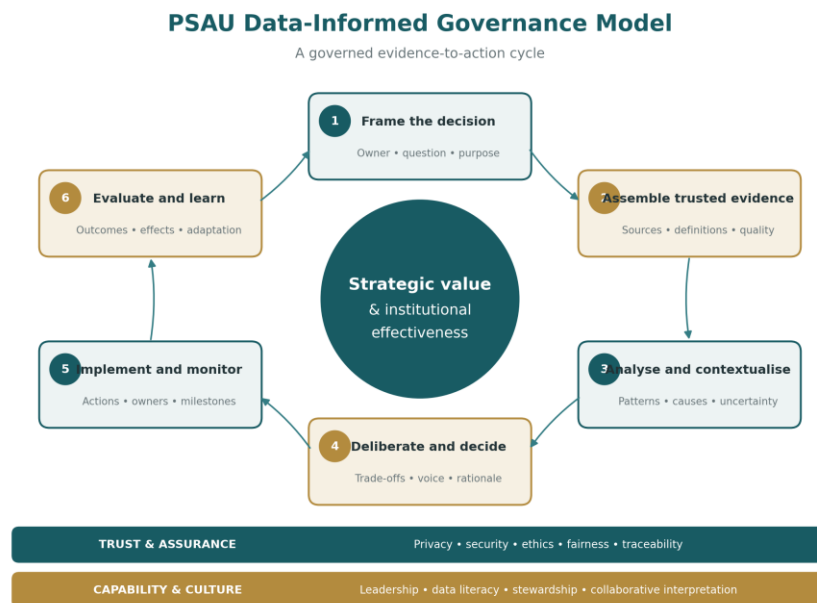
Documentary source	Institutional evidence	Design implication
Strategic plan	Academic quality; labour-market alignment; research and innovation; continuous development.	Organise evidence around strategic questions and outcomes rather than available datasets.
Organisational guide	Defined authorities; Business Intelligence Unit; Decision Support; Development and Quality; Institutional Excellence.	Use a federated role matrix with university-wide standards and domain accountability.
Data and AI Office	Data quality, integrity, protection, governance, AI and data literacy linked to decision support.	Provide the policy, stewardship and data-literacy secretariat for the model.
Open-data commitment	Reliable, current and reusable data for transparency, research, innovation and decision-makers.	Create a governed data catalogue and publication pathway with clear ownership and reuse conditions.
Digital transformation strategy, 2026-2028	Integrated digital ecosystem; data and AI; governance; cybersecurity; business continuity; KPI follow-up.	Align governance routines, platform investment and performance monitoring within one transformation portfolio.
Enterprise-architecture initiative	Unified platform for models, documents, maps and project updates; better organisational data and monitoring.	Connect enterprise architecture with metadata, lineage, common entities and decision-support workflows.

Note. Source: Author's synthesis of PSAU public documents cited in the text.

7. THE PSAU DATA-INFORMED GOVERNANCE MODEL

The proposed PSAU Data-Informed Governance Model (PSAU-DIGM) is a closed evidence-to-action cycle supported by two cross-cutting enablers: trust and assurance, and capability and culture. It begins with an institutional question and ends with documented learning. The model does not centralise every decision or dataset; it establishes a common discipline for choices that cross units, affect strategic resources or people, or contribute to accreditation and performance.

Figure 1. PSAU Data-Informed Governance Model: Evidence-to-action cycle



Source: Author's conceptual synthesis.

Stage 1 - Frame the decision. Analytical work begins with a decision charter, not a request for "more data". The charter identifies the owner, precise question, strategic objective, affected population, deadline, constraints and plausible action. "What was first-year retention?" is reporting. "Which preventable factors contribute to non-continuation, for which groups, and which intervention should receive priority?" is a decision question. Framing prevents analysts from optimising a metric loosely connected to the underlying problem.

Stage 2 - Assemble trusted evidence. The data owner and steward identify authorised sources, definitions, lineage, access conditions and quality thresholds. Evidence may combine student, curriculum, finance, human-resource, research, service and survey data with programme reviews, focus groups, complaints, professional observations and benchmarking. A quality statement reports completeness, timeliness, consistency, exclusions and unresolved anomalies. When data are not fit for purpose, the analysis should be qualified or postponed rather than uncertainty concealed.

Stage 3 - Analyse and contextualise. Descriptive analysis establishes what is happening; diagnostic analysis explores reasons; predictive analysis estimates what may occur; and scenario analysis compares choices. Predictions should not be presented as causes, and model performance should be reported for relevant groups. Assumptions, uncertainty and sensitivity to alternative definitions must be visible. The Statistical Studies and Decision Support Administration could lead complex work, collaborating with Business Intelligence for recurring visualisation and domain experts for interpretation.

Stage 4 - Deliberate and decide. An appropriate forum reviews the evidence brief. Strategic matters may pass through a proposed University Data and Evidence Council before reaching the authorised executive or council; operational matters may remain within a vice presidency, deanship or college. Review covers relevance, quality, interpretation, ethics, feasibility and trade-offs. Affected stakeholders should be represented or consulted. The decision record states the option, evidence, assumptions, conditions, material dissent and responsible authority, preserving transparency and institutional memory.

Stage 5 - Implement and monitor. Each decision creates an action portfolio with an executive sponsor and operational owner. It specifies resources, responsibilities, milestones, dependencies, risks and indicators. Leading indicators show whether implementation is proceeding; lagging outcomes show whether the intended effect occurred. For student support, timely adviser assignment and contact may lead, while progression, credit completion and subgroup gaps lag. Dashboards are most valuable here when they prompt action rather than merely display history.

Stage 6 - Evaluate and learn. A scheduled review examines implementation fidelity, intended and unintended outcomes, distributional effects, costs and stakeholder experience. It asks whether the decision plausibly contributed to change. Interrupted time series, matched comparisons, pilots or phased roll-outs should be used where practical. Results enter a decision register: effective practices are scaled, weak ones redesigned or stopped, and definitions, models and policies updated. This stage turns analytics into organisational learning.

Trust and assurance operate throughout the cycle through privacy and security controls, purpose limitation, role-based access, retention rules, audit trails, model documentation, fairness testing and correction or appeal. High-risk applications, such as predictive identification of vulnerable students, should receive ethical and privacy review and remain subject to meaningful human oversight.

Capability and culture are the second enabler. Leaders need to interpret uncertainty and causal limits; owners and stewards need definition and quality skills; analysts need communication and institutional knowledge; and faculty and staff need collaborative spaces for non-punitive interpretation. Staff take quality seriously when leaders use evidence consistently, acknowledge limitations and reward correction rather than concealment (Etomes et al., 2025).

The model distinguishes three decision tiers. Tier 1 covers local and reversible operational decisions, such as adjusting a service schedule; these follow a lightweight charter and monitoring record. Tier 2 covers cross-unit or resource-significant decisions, such as redesigning an advising process or reallocating teaching capacity; these require a full evidence brief and multidisciplinary review. Tier 3 covers strategic, high-risk or rights-affecting decisions, including programme portfolio changes, predictive student classifications or major investment choices; these require executive authorisation, privacy and ethical assurance, documented consultation and formal outcome evaluation. Tiering makes governance proportionate rather than uniformly bureaucratic.

Roles should be explicit. The University Council and President retain strategic authority. A proposed Data and Evidence Council would coordinate priority domains, cross-unit definitions, data risks and completion of the decision cycle without replacing statutory bodies. The Data and AI Office would act as policy and stewardship secretariat. Domain leaders would own meaning and authorised use; stewards would manage definitions and quality; IT and enterprise architecture would provide integration and custody; assurance functions would test controls; and colleges and units would interpret evidence and implement action.

The proposed Data and Evidence Council should be small enough to decide and broad enough to command legitimacy. Core membership could include senior representation from academic affairs, the University Vice Presidency, graduate studies and research, development and quality, the Data and AI Office, decision support, business intelligence, IT, cybersecurity and legal or privacy assurance. Domain leaders and student or faculty representatives would join when relevant. The council would not review every report. Its recurring agenda would focus on priority data domains, unresolved definition disputes, high-impact evidence briefs, cross-unit implementation risks and lessons from completed evaluations.

This federated architecture balances central coherence with local responsibility. Full centralisation would lose disciplinary and operational context, while full decentralisation would reproduce incompatible definitions and fragmented systems. University-wide standards are coordinated centrally, but data production, interpretation and action remain near the domain. The design reflects the contingency principle of organisational fit (Weber et al., 2009) and the hybrid character of university governance (Capano & Pritoni, 2020).

Table 2. PSAU-DIGM stages, accountabilities and primary outputs

Stage	Governance task	Primary accountability	Output
1. Frame	Define the decision, purpose, owner, population, constraints and plausible action.	Decision owner; analysts and affected domain.	Decision charter.

Stage	Governance task	Primary accountability	Output
2. Evidence	Identify authorised sources, definitions, lineage, access and quality limits.	Data owner and steward; IT custodian; domain experts.	Evidence inventory and quality statement.
3. Analyse	Describe, diagnose, forecast or compare scenarios; show uncertainty and alternatives.	Decision Support; Business Intelligence; domain experts.	Evidence brief.
4. Decide	Test relevance, quality, ethics, feasibility and trade-offs; record rationale and dissent.	Authorised council or executive; stakeholders as appropriate.	Decision record.
5. Implement	Assign sponsor, operational owner, resources, milestones, risks and indicators.	Executive sponsor; college, deanship or administrative unit.	Action portfolio and monitoring view.
6. Learn	Evaluate fidelity, outcomes, equity, cost and unintended effects; adapt or stop.	Decision owner; quality/evaluation team; Data and Evidence Council.	Outcome review and updated decision register.

Note. Formal statutory authority remains with the University's authorised councils and executives; the proposed Data and Evidence Council is a coordinating mechanism.

8. IMPLEMENTATION ROADMAP AND EVALUATION FRAMEWORK

Implementation should begin with a few consequential use cases rather than every dataset. In a foundation phase, PSAU would approve a decision charter, establish the Data and Evidence Council, map roles, select three to five priority domains and assess maturity. Suitable pilots include first-year progression, programme portfolio and labour-market alignment, research-investment allocation, service turnaround and teaching-space use. Each pilot needs an authorised decision, identifiable evidence and a reviewable outcome.

The pilot phase would create a business glossary, data catalogue, ownership and stewardship assignments, quality rules, evidence-brief template, decision register and privacy-risk screen. Existing dashboards should be classified as statutory reporting, operational monitoring or strategic decision support. Redundant reports can be retired, while high-value dashboards are linked to decisions and action owners. Teams should include domain specialists, analysts, quality staff, IT and affected users.

Scaling would integrate successful practices with enterprise architecture and digital transformation. Priority pipelines would be automated where feasible, metadata and lineage expanded, and common dimensions such as college, programme, cohort and academic period standardised. Evidence briefs and reviews would enter planning, budgeting, programme review and quality assurance. Advanced analytics should follow, not precede, mature data and intervention capacity; predicting risk has little value when an institution cannot respond.

Institutionalisation would place responsibilities in job descriptions and committee terms, establish quality service levels, make training recurrent and use the decision register for annual learning. External benchmarks can challenge assumptions, but definitions and comparison groups must be explicit. The governance model itself should be reviewed so that it does not become another compliance layer.

Table 3. Phased implementation roadmap for PSAU-DIGM

Phase	Priority actions	Main deliverable	Success test
Foundation 0-3 months	Approve the decision charter; establish the Data and Evidence Council; map roles; select priority domains; assess maturity.	Governance charter, role matrix and pilot portfolio.	Authority, scope and ownership are unambiguous.
Pilot 4-9 months	Build glossary and catalogue entries; assign owners and stewards; apply quality rules; issue evidence briefs; start decision register.	Three to five completed pilot cycles.	Decisions lead to owned actions and scheduled evaluation.
Scale 10-18 months	Integrate priority pipelines with enterprise architecture; standardise common dimensions; embed evidence briefs in planning, budgeting and programme review.	Reusable governed data products and integrated workflows.	Reduced duplicate reporting and faster evidence preparation.
Institutionalised 19-30 months	Place responsibilities in job descriptions and committee terms; establish service levels; repeat training; review the model annually.	Sustained operating model and annual learning report.	Demonstrable improvement without weakened privacy, equity or academic standards.

Note. Time ranges are indicative and should be adjusted after an internal maturity assessment.

The first-year progression pilot illustrates how the model would work. A decision charter could ask which modifiable conditions are associated with delayed progression and which intervention can be delivered equitably. Evidence would combine prior preparation, registration behaviour, course outcomes, attendance or platform activity where appropriate, advising contacts, student feedback and programme context. The analysis would be disaggregated, reviewed for privacy and used to choose a support response rather than label students permanently. Implementation would track whether support reaches intended students, while evaluation would test progression and experience against a credible comparison.

Evaluation requires balanced indicators. Data measures include completeness, accuracy, timeliness, consistency, lineage and issue-resolution time. Process measures include evidence-brief coverage, decision cycle time, participation, implementation completion and outcome reviews. Domain outcomes may include progression, learning, programme demand, graduate destinations, research quality, service turnaround, budget performance and beneficiary experience. Trust measures include privacy incidents, fairness reviews, correction requests and confidence in definitions; learning measures track decisions scaled, redesigned or discontinued after evaluation.

A single composite score should be avoided because it obscures trade-offs and invites gaming. A concise scorecard should be accompanied by narrative interpretation, subgroup analysis and unintended effects. Effectiveness is demonstrated when decisions become clearer and more timely, implementation is more reliable, resources align with priorities and outcomes improve without compromising equity, privacy or academic values.

9. DISCUSSION

PSAU-DIGM contributes in three ways. First, it connects data governance to the full life of a decision. Trusted data or a dashboard are not the endpoint; deliberation, implementation and evaluation are equally necessary. The model extends Seddon et al.'s (2017) analyse-insight-decision-action logic with a learning stage essential to institutional effectiveness.

Second, it resists governance by numbers. More performance data can strengthen accountability but also narrow attention and alter behaviour (Beerkens, 2022). Qualitative evidence, stakeholder participation, uncertainty statements and decision rationale preserve academic judgement while preventing intuition from remaining unexamined. This balance matters because educational quality and scholarly contribution are only partly captured by standard metrics.

Third, the model is grounded in PSAU's published structure. It coordinates existing capabilities associated with data and AI, business intelligence, statistical decision support, quality, institutional excellence, enterprise architecture and cybersecurity. The new element is a shared routine and coordinating council linking these functions to authorised decisions. This can strengthen accreditation by showing not only that indicators are collected, but that evidence produces improvement and that improvement is reviewed.

The model also reframes leadership. Data-informed leadership is not demonstrated by frequent reference to dashboards, but by the quality of questions leaders ask, their willingness to expose assumptions and their consistency in following decisions through to evaluation. Leaders must tolerate findings that complicate preferred narratives and must protect analysts and stewards who identify weaknesses. In return, analytical units must communicate in language that makes uncertainty usable rather than hiding it behind technical detail. This reciprocal discipline is central to a credible evidence culture.

For Saudi higher education, the design offers a bridge between autonomy and accountability. Greater institutional discretion can improve responsiveness, but it also raises the importance of transparent decision rights, reliable evidence and internal assurance. PSAU-DIGM does not treat national requirements as an external burden. By building privacy, quality and traceability into routine decisions, it can reduce repeated compliance work and make institutional reporting a by-product of well-governed management rather than a separate exercise.

Artificial intelligence may assist pattern detection, forecasting, document analysis or service optimisation, but it cannot define legitimate purposes, validate data, examine bias, protect rights or accept responsibility. Human oversight must include the capacity to understand, question and override a recommendation. Responsible AI is therefore an outcome of sound governance, not its substitute.

10. LIMITATIONS AND FUTURE RESEARCH

The model is derived from literature and public documents and therefore cannot reveal informal practices, internal system architecture, staff readiness or the quality of particular PSAU datasets. It should be tested through interviews, process mapping and maturity assessment with leaders, faculty, professional staff, students, analysts and data stewards. Pilot studies should then examine whether the model improves decision cycle time, trust, implementation fidelity and domain outcomes. Comparative research across Saudi universities could identify which components require local adaptation and which can form a shared national reference architecture.

11. CONCLUSION

Data-informed governance is not the practice of placing more indicators before university leaders. It is the disciplined organisation of questions, evidence, authority, deliberation, action and learning. PSAU's published strategy and organisational structure indicate that many of the necessary capabilities already exist: a commitment to quality and continuous development, specialised data and analytical units, quality and excellence functions, digital transformation, enterprise architecture and national alignment. The strategic opportunity is to connect these assets through a common evidence-to-action cycle.

PSAU-DIGM offers that connection. It begins with a decision charter, builds a trusted and context-rich evidence base, requires transparent analysis and deliberation, assigns ownership for execution and closes the loop through evaluation. Privacy, fairness, security, data literacy and organisational culture operate throughout the model. Its use of the term data-informed is intentional. Effective university governance should be more rigorous than intuition alone, but more humane and intellectually honest than rule by metric. When evidence is treated as a shared institutional resource, decisions can become clearer, more accountable and more capable of producing sustained improvement.

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