



# **PREDICTORS OF EFFECTIVENESS OF GENERATIVE ARTIFICIAL INTELLIGENCE GOVERNANCE FRAMEWORKS IN HIGHER EDUCATION INSTITUTIONS: BASIS FOR POLICY DEVELOPMENT**

Christopher V. Gonzales and Lorieemel E. Ferrera, DIT

*Graduate School, Colegio de San Juan de Letran Calamba, Calamba City, Laguna, Philippines*

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## **ABSTRACT**

The rapid integration of Generative Artificial Intelligence (Generative AI) presents higher education institutions (HEIs) with dual challenges and opportunities, necessitating robust governance to uphold academic integrity and ethical standards. This study aimed to identify the critical predictors influencing the perceived effectiveness of Generative AI governance frameworks within HEIs in Calamba City, Laguna, Philippines, providing an empirical foundation for tailored policy development. A quantitative, descriptive-correlational research design was employed, utilizing a self-developed questionnaire based on a Semantic Differential Scale. Survey data were collected from a stratified sample of Faculty, Administrators, and Students. Data analyses included descriptive statistics, Pearson correlation, and standard multiple regression analysis to test the predictive power of seven variables: leadership, policies, infrastructure, ethical considerations, faculty readiness, student readiness, and budgetary considerations. Findings confirmed that governance effectiveness is fundamentally an ethical imperative, with Ethical Considerations emerging as the strongest independent predictor for all groups. Key divergences were observed: Faculty/Administrators' perceived effectiveness was significantly driven by Budgetary Considerations and Faculty Readiness, indicating resource constraints. Conversely, students prioritized Technological Infrastructure and Institutional Policies, highlighting gaps in resource accessibility and clarity of rules. Both groups rated overall effectiveness highly but identified needs for improvement in mitigating algorithmic bias and clarifying intellectual property rights. Results highlighted a resource-perceptual mismatch, indicating that successful governance extends beyond compliance to focus on ethical principles. The study recommended adopting the AI-COMPASS Governance Framework to prioritize sustainability and enhance ethical

guardrails. This research enriches the Technology Acceptance Model (TAM) and Diffusion of Innovations (DOI) theory by linking institutional factors to technology governance success.

**Keywords:** *Generative AI Governance, Higher Education, Ethical Considerations, Policy Development, Academic Integrity*

## INTRODUCTION

The global educational landscape is undergoing a profound and unprecedented transformation, fundamentally reshaped by the accelerating integration of Artificial Intelligence (AI) technologies. This technological paradigm shift presents a complex dualistic challenge: simultaneously offering unprecedented opportunities for innovation, pedagogical enhancement, and administrative efficiency, while also posing multifaceted problems that demand rigorous scholarly inquiry and proactive strategic responses, particularly within Higher Education Institutions (HEIs) (UNESCO, 2019; Debo & Saaida, 2024). Among the diverse and rapidly evolving spectrum of AI applications, Generative Artificial Intelligence (Generative AI)—characterized by its advanced capacity to autonomously produce novel, coherent, and contextually relevant content such as text, images, audio, video, and code—stands out as a particularly disruptive and transformative force. Its emergence brings both profound opportunities and complex challenges that necessitate careful consideration and strong governance (Akinwalere & Ivanov, 2022; Zawacki-Richter et al., 2019).

The capabilities of Generative AI are extensive and varied, promising significant enhancements across nearly all facets of higher education. For students, Generative AI can facilitate highly personalized learning experiences through the creation of tailored study materials, adaptive quizzes that adjust difficulty level based on performance, and individualized feedback on assignments, potentially leading to improved learning outcomes, deeper conceptual understanding, and greater student engagement (Yusuf et al., 2024). More so, these tools can streamline routine and time-consuming tasks such as drafting communications, summarizing extensive meeting minutes, generating reports, or automating student enrollment and support processes. This efficiency gain can free up valuable staff time and resources, allowing personnel to focus on more complex, strategic, and human-centric responsibilities that require critical thinking, emotional intelligence, and interpersonal skills (Wang et al., 2023). In academic research, Generative AI offers powerful functionalities, including the rapid summarization of vast datasets, the identification of novel research questions from interdisciplinary fields, and even the generation of testable hypotheses. This capability can significantly accelerate discovery, foster new avenues of scholarly inquiry, and enhance research productivity and innovation across disciplines (Akinwalere & Ivanov, 2022). For instance, Generative AI-powered tools can analyze extensive literature databases to identify emerging trends and unexplored gaps, suggest interdisciplinary connections previously overlooked, or even assist in the formulation of experimental designs and statistical analyses, thereby

significantly enhancing research productivity and innovation (Zawacki-Richter et al., 2019).

However, the transformative potential of Generative AI is inextricably linked with a complex array of challenges that necessitate careful consideration, proactive strategic planning, and robust governance. Concerns regarding academic integrity are paramount, particularly the potential for sophisticated forms of plagiarism, contract cheating, and the blurring of authorship lines, which can fundamentally undermine the authenticity of student work and the validity of assessment methods (Debo & Saaida, 2024). Ethical dilemmas surrounding data privacy and security, algorithmic bias, where AI systems perpetuate or amplify societal biases present in their training data, intellectual property right, and the potential for job displacement within educational settings (e.g., for administrative staff or even certain teaching roles) also demand urgent and comprehensive attention (UNESCO, 2019). Furthermore, the equitable access to and effective integration of these technologies across diverse socioeconomic contexts, especially in developing countries like the Philippines, poses significant infrastructural, financial, and pedagogical hurdles. Issues such as unreliable internet connectivity, lack of access to high-performance computing resources, and disparities in digital literacy among both educators and students can exacerbate existing inequalities (Yusuf et al., 2024). Without robust and contextually relevant governance frameworks, the risks associated with unchecked Generative AI use could severely undermine the core values of academic rigor, fairness, equity, and human-centric education, potentially leading to a decline in educational quality and trust.

A critical observation underpinning this study is the reality that a significant number of Higher Education Institutions (HEIs) globally, and particularly within the Philippines, have yet to implement comprehensive and well-defined governing policies for the use of Generative AI (Sutedjo et al., 2025; Giray et al., 2024). This policy vacuum creates an environment of uncertainty, where the potential benefits of Generative AI may not be fully realized due to a lack of clear guidelines, and the inherent risks may proliferate unchecked. The absence of formal frameworks leaves faculty, students, and administrators to navigate the complexities of Generative AI use on an ad-hoc basis, leading to inconsistencies in application, varied interpretations of ethical boundaries, and potential inequities in access and assessment. The urgency of this issue is amplified by the rapid evolution of Generative AI capabilities, which continuously present new challenges and opportunities that demand agile and adaptive governance responses (Sutedjo et al., 2025).

This study is therefore rationalized by the urgent and critical need to understand the many-sided factors influencing the effective development and successful implementation of comprehensive governance frameworks for Generative AI within HEIs, specifically focusing on the unique context of Calamba City, Philippines. The choice of this topic is a response to several key existing conditions and factors, informed by both a gap in the scholarly literature and a series of informal observations and discussions with faculty and administrators in the area. While the global literature highlights the dual nature of Generative AI, there is a distinct lack of empirical research, particularly in the Philippine

context, that investigates the specific predictors of effective governance frameworks. Furthermore, a preliminary review of existing institutional policies and anecdotal evidence confirmed a widespread absence or inadequacy of formal, comprehensive policies for Generative AI use in the local setting. The consequences of this policy vacuum are profound and manifest in specific, local issues: inconsistent application and varied interpretations of ethical boundaries; unrealized benefits due to a lack of clear guidelines; and the unchecked proliferation of inherent risks, including academic integrity breaches, data privacy concerns, and algorithmic bias (UNESCO, 2019; Debo & Saaida, 2024). This problem is particularly acute in developing countries like the Philippines due to specific infrastructural, financial, and pedagogical hurdles (Maimela & Mbonde, 2025).

Therefore, this research aims to provide a robust and data-driven justification for the proactive development of governance frameworks tailored to the unique environment of Calamba City. By empirically investigating the determinants of perceived effectiveness, this study sought to fill a critical gap in the literature and provide valuable insights that can inform the creation of policies that enable HEIs to effectively harness the benefits of Generative AI while proactively mitigating its inherent risks and upholding academic integrity and ethical standards. This research uniquely contributes by providing a micro-perspective on a macro-problem, offering a foundational empirical dataset and a conceptual framework that future researchers can build upon. Drawing from a general review of established governance models and institutional best practices, this study investigated the perceived effectiveness of Generative AI governance frameworks through the lens of key predictors, including: (1) Top management leadership, which refers to the strategic direction and visible commitment of senior officials (Weill & Ross, 2004); (2) Institutional policies and guidelines, which are the formal and informal rules and directives established by the HEI (Jin et al., 2024); (3) Technological infrastructure and support systems, which encompasses the availability and adequacy of technological resources (Bates & Sangra, 2011); (4) Ethical considerations, which assess how concerns like data privacy and academic integrity are addressed (Samoili et al., 2020); (5) Faculty readiness, which measures the preparedness of educators to understand and integrate these tools (Fathema et al., 2015); (6) Student readiness, which evaluates students' awareness and readiness, understanding, and skills related to Generative AI; and (7) Budgetary considerations, which examine the financial resources allocated for the implementation and maintenance of governance frameworks (Maimela & Mbonde, 2025). These predictors serve as the foundational variables for this research, providing a comprehensive framework for a grounded, empirical analysis.

## Research Framework

This study draws on two established theoretical perspectives to provide a robust framework for understanding the complex interactions among predictors influencing governance effectiveness. The Technology Acceptance Model (TAM) (Davis, 1989) is utilized to understand the human dimension of the framework, specifically Faculty and Student Readiness. TAM posits that Perceived Usefulness (PU) – the belief that Generative AI enhances job or academic performance, and Perceived Ease of Use (PEOU) – the perception that using Generative AI and its governance requires minimal

effort – are fundamental predictors of attitude and behavioral intention. External variables, such as institutional training and support, are theorized to influence PU and PEOU, thereby indirectly impacting policy adherence. Complementing this, the Diffusion of Innovations (DOI) Theory (Rogers, 2003) provides a broader organizational perspective through five attributes: Relative Advantage (perceived benefits over a lack of governance), Compatibility (alignment with existing pedagogical goals), Complexity (difficulty of understanding policies), Trialability (opportunities to experiment), and Observability (visibility of successful outcomes like reduced plagiarism).

The conceptual framework integrates these theories by identifying seven independent variables (predictors). Top Management Leadership provides the strategic vision and institutional support necessary for success, aligning with DOI's Observability. Institutional Policies and Guidelines establish formal rules whose perceived quality directly impacts governance effectiveness through Compatibility. Technological Infrastructure and Support Systems serve as enablers, reducing perceived Complexity and enhancing Relative Advantage. Ethical Considerations ensure the framework addresses data privacy and academic integrity, maintaining legitimacy and academic values. Faculty and Student Readiness are operationalized through TAM's core concepts, where higher readiness leads to greater acceptance and adherence to governance. Finally, the Budgetary Considerations act as the financial foundation for training, infrastructure, and enforcement. The outcome variable is the Perceived Effectiveness of Generative AI Governance Framework, representing the holistic assessment of how well these frameworks mitigate risk and foster innovation. The study moves from this theoretical analysis to the practical development of a concrete policy framework for HEIs.

## Research Questions

This study investigated the predictors of effectiveness of governance frameworks for Generative Artificial Intelligence in Higher Education Institutions in Calamba City, Philippines, and provided a basis for policy development.

Specifically, this study addressed the following questions:

1. To what extent did the following predictors influence the effectiveness of Generative AI governance frameworks in HEIs in Calamba City:
  - a. Top management leadership;
  - b. Institutional policies and guidelines;
  - c. Technological infrastructure and support systems;
  - d. Ethical considerations;
  - e. Faculty readiness;
  - f. Student readiness; and
  - g. Budgetary considerations?
2. What were the challenges encountered by HEIs in Calamba City in developing and implementing effective governance frameworks for Generative AI?
3. Was there a relationship between top management leadership, institutional policies and guidelines, technological infrastructure and support systems,

- ethical considerations, faculty readiness, student readiness, and budgetary considerations, and the effectiveness of Generative AI governance frameworks in HEIs in Calamba City?
4. What governance framework for Generative AI in an academic setting was developed based on the results of the study?

## METHODOLOGY

This study investigated the predictors of perceived effectiveness of Generative AI governance frameworks in Higher Education Institutions (HEIs) in Calamba City, Philippines. A quantitative, descriptive-correlational research design was employed to characterize the current state of Generative AI governance and determine the relationships between identified predictors and the outcome variable. This design was strategically chosen to describe the population characteristics—focusing on the "what is" of AI governance—while investigating the nature, strength, and direction of associations among variables.

### Research Locale and Participants

The study was conducted in Calamba City, Laguna, a highly industrialized urban center that serves as a fitting microcosm for understanding AI governance in developing contexts. The target population included academic administrators, faculty, and students directly engaged with Generative AI. Of the 22 HEIs identified on the CHED website, 11 institutions successfully participated in the study. Purposive sampling was used to select HEIs actively exploring AI integration, followed by stratified random sampling to ensure representation across stakeholder groups. Although the study targeted a sample of 100–150, the final data collection yielded 412 valid responses, providing a more robust dataset than initially anticipated (Table 1).

**Table 1**  
**Distribution of Respondents (N=412)**

Stakeholder Group	Count(n)
Administrators/Faculty Members	64
Students	348
Total	412

### Instrumentation and Ethical Considerations

Data were collected via two tailored versions of a self-administered questionnaire. The instrument is a hybrid tool, self-developed from literature and adapted from validated technology acceptance scales like the Technology Acceptance Model (TAM). It utilized a 7-point Semantic Differential Scale (Inadequate to Adequate) to measure six independent predictors: top management leadership, institutional policies, technological infrastructure, ethical considerations, faculty/student readiness, and budgetary considerations. Perceived effectiveness (the dependent variable) was assessed across clarity,

enforceability, and impact. Challenges were quantified using a 4-point Likert scale (1 = Not a Challenge to 4 = Major Challenge). Reliability was confirmed via pilot testing with a small group (N=30), yielding a Cronbach's Alpha  $\geq 0.70$  across all constructs.

The study strictly adhered to ethical standards. Informed consent was obtained electronically, explicitly detailing the study's purpose and the voluntary nature of participation. To safeguard privacy, no personal identifiable information (PII) was collected; instead, participants and institutions were assigned non-identifiable codes. Data were stored in encrypted, password-protected digital repositories.

## Data Analysis

The final dataset underwent a rigorous cleaning process for completeness and consistency before analysis in SPSS. Descriptive statistics (mean and standard deviation) were used to profile the variables based on the interpretation ranges in Table 2.

**Table 2**  
**Interpretation of Results**

Score Range	Interpretation	
1.00 - 2.50	Inadequate	Ineffective
2.51 - 4.00	Somewhat Inadequate	Somewhat Effective
4.01 - 5.50	Adequate	Effective
5.51 - 7.00	Very Adequate	Very Effective

Inferential statistics included Pearson's (r) correlation analysis to determine the strength of relationships, which were interpreted using Cohen's (1988) criteria: (r = 0.10 – 0.29) weak correlation, (r = 0.30 – 0.49) moderate correlation, (r = 0.50 – 1.00) strong correlation. Standard multiple regression analysis determined the predictive relationship between the set of variables, focusing on R<sup>2</sup>, F-statistics, and individual p-values (p < 0.05). Frequency and percentage analysis identified the most prevalent challenges. The quantitative findings were synthesized to propose a governance framework for Generative AI in academic settings.

## RESULTS AND DISCUSSION

This section presents the results derived from the survey data collected from faculty members, academic administrators, and students in HEIs in Calamba City, structured to address the specific research questions.

### 1. Influence of Predictors on Governance Effectiveness (RQ1)

The assessment of the seven specific predictors revealed that while the predictors were generally perceived as "Adequate," the overall Perceived Effectiveness (PE) of Generative AI governance was rated as "Effective." The data shows a distinct institutional landscape when viewed through different stakeholder lenses.

**Table 3**  
**Summary of Faculty/Administrator Perception of Predictor Variables (IVs) and Effectiveness (DV)**

Predictor/Outcome Variable	Mean ( $\bar{x}$ )	Standard Deviation (SD)	Interpretation
Top Management Leadership (TML)	4.84	1.29	Adequate
Institutional Policies and Guidelines (IPG)	4.47	1.49	Adequate
Technological Infrastructure (TIS)	4.79	1.43	Adequate
Ethical Considerations (EC)	4.44	1.43	Adequate
Faculty Readiness (FR)	5.06	1.24	Adequate
Budgetary Considerations (BC)	4.17	1.55	Adequate
<b>Perceived Effectiveness (PE)</b>	<b>4.50</b>	<b>1.41</b>	<b>Effective</b>

### ***Faculty and Academic Administrators' Perception***

Faculty and administrators rated Faculty Readiness (FR,  $\bar{x}$ =5.06) as the highest predictor, with the lowest variance (SD=1.24), signifying strong institutional agreement on individual preparedness. Top Management Leadership (TML,  $\bar{x}$ =4.84) followed as the second-highest predictor. Notably, Budgetary Considerations (BC,  $\bar{x}$ =4.17) received the lowest mean score and the highest variance (SD=1.55). This high SD points to significant inequity or a lack of standardization in financial support across different departments or institutional types, creating a critical bottleneck where faculty are personally ready but institutionally unsupported.

**Table 4**  
**Summary of Student Perception of Predictor Variables (IVs) and Effectiveness (DV)**

Predictor/Outcome Variable	Mean ( $\bar{x}$ )	Standard Deviation (SD)	Interpretation
Institutional Policies and Guidelines (IPG)	4.94	1.30	Adequate
Technological Infrastructure (TIS)	4.32	1.40	Adequate
Ethical Considerations (EC)	4.32	1.40	Adequate
Student Readiness (SR)	5.24	1.11	Adequate
<b>Perceived Effectiveness (PE)</b>	<b>4.86</b>	<b>1.28</b>	<b>Effective</b>

### ***Student Perspective***

Student assessments were similarly driven by Student Readiness (SR,  $\bar{x}$ =5.24), which demonstrated the lowest variance (SD=1.11), suggesting that student motivation and self-perceived competence are primary sources of positive governance outcomes. Conversely, students identified Technological Infrastructure (TIS,  $\bar{x}$ =4.32) and Ethical

Considerations (EC,  $\bar{x}$ =4.32) as the most significant areas of institutional weakness. These tied for the lowest mean scores, revealing that systemic support mechanisms are lagging behind student capability.

## 2. Challenges in Development and Implementation (RQ2)

The study confirmed that establishing effective governance for Generative AI is viewed as a Significant Challenge across all measured dimensions, reflected in an overall mean of  $\bar{x}$ =2.93 for faculty/administrators and  $\bar{x}$ =2.58 for students. The low overall standard deviations ( $SD < 0.70$ ) indicate a strong consensus among both groups that the implementation process is overwhelmingly difficult, requiring simultaneous, multi-faceted intervention.

**Table 5**  
**Faculty/Administrator Perceived Challenges in Implementing Generative AI Governance**

Challenge	Frequency (f)	Percentage (%)	Interpretation
J1. Guidelines or policies from regulatory bodies (e.g., CHED).	3.02	.79	Significant Challenge
J2. Understanding of Generative AI capabilities and risks among stakeholders (e.g., faculty, administration)	2.83	.77	Significant Challenge
J3. Financial resources for developing and implementing governance frameworks.	3.16	.88	Significant Challenge
J4. Technological infrastructure to support governance mechanisms (e.g., monitoring tools, secure platform)	3.06	.85	Significant Challenge
J5. Resistance to change or skepticism from faculty/staff regarding Generative AI adoption or governance.	2.73	.91	Significant Challenge
J6. Dedicated personnel or expertise for AI governance within the institution.	2.83	.90	Significant Challenge
J7. Adapting existing academic integrity policies to address Generative AI use.	2.75	.85	Significant Challenge
J8. Concerns about data privacy and security when using Generative AI tools.	2.98	.92	Significant Challenge

J9. Challenges in addressing intellectual property rights for AI-generated content.	3.13	.88	Significant Challenge
J10. Policy development compared to rapid technological advancements in Generative AI.	2.92	.80	Significant Challenge
J11. Collaboration or coordination among different departments/units on AI governance.	2.77	.81	Significant Challenge
J12. Provision of comprehensive training for all stakeholders on Generative AI tools and responsible user.	3.02	.83	Significant Challenge
<b>Overall Mean</b>	<b>2.93</b>	<b>.68</b>	<b>Significant Challenge</b>

Faculty and administrators identified the most pressing problems as primarily structural and resource-based. The three highest-ranked concerns centered on securing Financial Resources (J3,  $\bar{x}$ =3.16), managing Intellectual Property Rights (J9,  $\bar{x}$ =3.13), and establishing the Technological Infrastructure (J4,  $\bar{x}$ =3.06) necessary to support monitoring and security. Furthermore, a widespread administrative struggle was noted due to a lack of clear, top-down mandates from regulatory bodies (J1,  $\bar{x}$ =3.02), which showed the strongest consensus among administrators.

**Table 6**  
**Student Perceived Challenges in Implementing Generative AI Governance**

Challenge	Frequency (f)	Percentage (%)	Interpretation
J1. Guidelines or policies from regulatory bodies (e.g., CHED).	2.46	.79	Minor Challenge
J2. Understanding of Generative AI capabilities and risks among stakeholders (e.g., faculty, administration)	2.44	.89	Minor Challenge
J3. Financial resources for developing and implementing governance frameworks.	2.70	.84	Significant Challenge
J4. Technological infrastructure to support governance mechanisms (e.g., monitoring tools, secure platform)	2.65	.90	Significant Challenge
J5. Resistance to change or skepticism from faculty/staff regarding Generative AI adoption or governance.	2.59	.85	Significant Challenge

J6. Dedicated personnel or expertise for AI governance within the institution.	2.59	.82	Significant Challenge
J7. Adapting existing academic integrity policies to address Generative AI use.	2.47	.89	Minor Challenge
J8. Concerns about data privacy and security when using Generative AI tools.	2.70	.92	Significant Challenge
J9. Challenges in addressing intellectual property rights for AI-generated content.	2.65	.87	Significant Challenge
J10. Policy development compared to rapid technological advancements in Generative AI.	2.65	.88	Significant Challenge
J11. Collaboration or coordination among different departments/units on AI governance.	2.54	.83	Significant Challenge
J12. Provision of comprehensive training for all stakeholders on Generative AI tools and responsible user.	2.56	.83	Significant Challenge
<b>Overall Mean</b>	<b>2.58</b>	<b>.65</b>	<b>Significant Challenge</b>

Student respondents echoed these concerns, ranking Financial Resources (J3,  $\bar{x}=2.70$ ) and Data Privacy and Security (J8,  $\bar{x}=2.70$ ) as their top challenges. However, a key divergence emerged in their perception of foundational issues; students classified "understanding AI risks" (J2,  $\bar{x}=2.44$ ) and "adapting integrity policies" (J7,  $\bar{x}=2.47$ ) as mere Minor Challenges. This suggests that students feel highly competent in their awareness of AI risks, effectively placing the responsibility on institutional actors to catch up to student capability rather than focusing on student educational gaps.

### 3. Relationship and Prediction of Effectiveness (RQ3)

Inferential analysis revealed highly predictive models for both stakeholder groups, though it uncovered a critical hierarchy of influence that necessitates a shift from structural compliance to strategic human investment.

### **Faculty and Administrators' Perspective**

**Table 7**  
**Independent Predictors of Generative AI Effectiveness (Faculty/Administrators)**

<b>Predictor</b>	<b>Standardized Coeff. (<math>\beta</math>)</b>	<b>Unstandardized Coeff. (B)</b>	<b>t</b>	<b>Sig. (p-value)</b>	<b>Contribution to Effectiveness</b>
Ethical Considerations	.400	.393	4.299	<.001	Significant (Strongest)
Top Management Leadership	.250	.228	3.128	.003	Significant
Faculty Readiness	.227	.259	3.222	.002	Significant
Institutional Policies	.092	.086	1.184	.241	Non-Significant
Budgetary Considerations	.046	.050	.603	.549	Non-Significant
Technological Infrastructure	.038	.038	.534	.596	Non-Significant

The regression model for this group was highly robust, explaining 92.1% of the variance in perceived effectiveness ( $R^2 = .921$ ,  $F = 111.066$ ,  $p < .001$ ). Despite the initial correlation showing all six factors as strongly related to effectiveness ( $r > .82$ ), the regression analysis identified only three unique, statistically significant independent predictors: Ethical Considerations ( $\beta = .400$ ), Top Management Leadership ( $\beta = .250$ ), and Faculty Readiness ( $\beta = .227$ ). Ethical considerations emerged as the dominant driver, suggesting that for administrators, a framework's success is measured primarily by its moral integrity and transparency rather than its technical specifications.

This created what is termed the "Baseline Contradiction." While Budgetary Considerations, Institutional Policies, and Technological Infrastructure were strongly correlated with effectiveness, they failed to reach significance in the regression model. This implies that faculty and administrators view these elements as mandatory "baseline requirements." Merely satisfying these structural needs does not actively drive a perception of success; instead, they serve as the neutral foundation upon which the active drivers—Ethics, Leadership, and Readiness—must be built to achieve true governance effectiveness.

## Student Perspective

**Table 8**  
**Independent Predictors of Generative AI Effectiveness (Students)**

Predictor	Standardized Coeff. ( $\beta$ )	Unstandardized Coeff. (B)	t	Sig. (p-value)	Contribution to Effectiveness
Ethical Considerations	.407	.400	9.819	<.001	Significant / Strongest
Student Readiness	.220	.254	5.875	<.001	Significant
Technological Infrastructure	.204	.186	6.265	<.001	Significant
Institutional Policies	.188	.185	4.975	<.001	Significant

The student model was similarly significant, explaining 83.7% of the variance ( $R^2 = .837$ ,  $F = 440.041$ ,  $p < .001$ ). Unlike the faculty group, all four core factors proposed for students were statistically significant, yet they followed a clear hierarchy of influence. Ethical Considerations ( $\beta = .407$ ) again dominated as the strongest predictor, reinforcing an "Ethics Mandate" where students measure governance success by the institution's commitment to academic integrity and data privacy.

This was followed by Student Readiness ( $\beta = .220$ ) and Technological Infrastructure ( $\beta = .204$ ), highlighting that students value personal empowerment and tangible access over formal documentation. Notably, Institutional Policies ( $\beta = .188$ ) had the smallest unique predictive power. This indicates that while clear policies must exist, they are less influential to students than the practical outcomes those policies produce, such as a fair ethical environment and improved technical skills.

## 4. Proposed Generative AI Governance Framework (RQ4)

The principal prescriptive output of this study is the AI-COMPASS Framework (AI-Comprehensive Oversight, Management, Policy, and Academic Sustainability Strategy). Formulated as a contextualized response to the specific needs of local HEIs, AI-COMPASS moves beyond rigid IT structures by translating statistically significant predictors into a Human-Centric AI Governance paradigm. This framework prioritizes ethical literacy and people-centered pillars to address the unique drivers identified in the Philippine context.

The framework is built upon seven action-oriented domains aligned with the study's findings. The Clarity pillar ensures policy cohesion and mission alignment, while Oversight and Security pillars respond to the study's strongest predictor—Ethical Considerations—by establishing accountability and mitigating algorithmic bias. To address the human element, the People pillar prioritizes competency building for faculty and students, mapping to their respective readiness coefficients. The Accessibility pillar

tackles digital equity and infrastructure needs, while the Sustainability pillar institutionalizes budgetary allocation. Finally, the Measurement pillar utilizes continuous improvement cycles to validate investments.

Implementation follows a three-phase strategy derived from Lewin's Change Model. Phase 1: Establishment and Ethical Alignment (Unfreeze and Prepare) secures leadership commitment and enforces an Ethical Use Mandate and dedicated AI budgets to stabilize the foundation. Phase 2: Execution and Human Capital Mobilization (Movement and Action) focuses on skills transfer through mandatory faculty upskilling, student AI literacy certifications, and the procurement of licensed tools. Phase 3: Review and Strategic Optimization (Refreeze and Sustain) institutionalizes these practices through a Stakeholder AI Committee and annual audits to ensure long-term agility.

The framework is designed for strategic scalability across institutional types. Public HEIs can utilize the Sustainability and Accessibility pillars to bypass slow public funding and guarantee equitable student experiences regardless of hardware limitations. Conversely, Private HEIs can leverage administrative agility and financial autonomy to rapidly implement high-priority drivers like Ethics and Budget. Ultimately, AI-COMPASS represents a robust, statistically supported model that places human and ethical capital at the center of governance to ensure effectiveness across diverse academic landscapes.

## Conclusions

This study investigated predictors of Generative AI governance effectiveness in Calamba City HEIs, revealing foundational success alongside critical stakeholder divergences. While both groups rated overall governance as effective, faculty expressed concerns regarding intellectual property and algorithmic bias, while students questioned long-term adaptability. A significant Technological Infrastructure Gap emerged, as students perceived resources as less adequate for their end-user experience compared to administrative assessments. Conversely, a Policy Clarity Gap indicated that students found guidelines more accessible than the personnel tasked with enforcement. Despite these gaps, high readiness scores confirm a strong institutional capacity for adoption. Inferentially, Ethical Considerations stood as the strongest independent predictor for all stakeholders, proving that trust and transparency are the primary determinants of governance success.

The analysis leads to three principal conclusions. First, the Priority of Ethics dictates that a principled, transparent framework is the most effective strategy for maximizing perceived legitimacy and community buy-in. Second, a Resource-Readiness Mismatch exists; administrators perceive financial and human capital as primary constraints (Resource-Based View), while students—confident in their own readiness—view infrastructure quality as the main driver of engagement. Third, foundational elements like Leadership and Technological Infrastructure serve as "baseline requirements" for faculty.

## Recommendations

The study strongly recommends the formal adoption of the AI-COMPASS Framework as the official institutional policy. Leadership should immediately prioritize "Data Guardrail Policies" to protect confidential information and secure multi-year funding to ensure sustainability. All AI guidelines should be centralized into a single document to clarify intellectual property and bias mitigation. Academic and HR departments should pivot faculty training toward high-level professional development in data privacy and IP rights. To close infrastructure gaps, HEIs should procure secure, licensed AI applications that align with students' readiness levels. Finally, future research using larger samples or longitudinal designs is encouraged to verify the sustainability of these interventions.

## Compliance with Ethical Standards

The researcher obtained informed consent from all participants, ensuring their freedom to withdraw at any time. Anonymity and data privacy were strictly maintained, safeguarding the respondents' well-being through secure, aggregated reporting. The researcher declares that no conflicts of interest exist, that plagiarism was avoided, and that no bias influenced the interpretation of the findings. Results were used purely for research. For full disclosure, Generative AI was utilized only for linguistic refinement.

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## REFERENCES

- Akinwalere, S. N., & Ivanov, V. (2022). Artificial Intelligence in Higher Education: Challenges and Opportunities. *Border Crossing*, 12(1), 1–15. <https://doi.org/10.33182/bc.v12i1.2015>
- Bates, A. W. & Sangra, A. (2011). *Managing Technology in Higher Education: Strategies for Transforming Teaching and Learning*. Jossey Bass. [https://www.researchgate.net/publication/279513336\\_Managing\\_Technology\\_in\\_Higher\\_Education\\_Strategies\\_for\\_Transforming\\_Teaching\\_and\\_Learning](https://www.researchgate.net/publication/279513336_Managing_Technology_in_Higher_Education_Strategies_for_Transforming_Teaching_and_Learning)
- Davis, F. (1989, September). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *ResearchGate*. <https://doi.org/10.2307/249008>
- Debo, Daba, Saaida, Mohammed (2024). AI in Higher Education: Opportunities and Challenges. *Www.researchgate.net*. [https://www.researchgate.net/publication/387931327\\_AI\\_in\\_Higher\\_Education\\_Opportunities\\_and\\_Challenges](https://www.researchgate.net/publication/387931327_AI_in_Higher_Education_Opportunities_and_Challenges)
- Fathema, N., Shannon, D., & Ross, M. (2015). Expanding The Technology Acceptance Model (TAM) to Examine Faculty Use of Learning Management Systems (LMSs) In Higher Education Institutions. *MERLOT Journal of Online Learning and Teaching*, 11(2). [https://jolt.merlot.org/Vol11no2/Fathema\\_0615.pdf](https://jolt.merlot.org/Vol11no2/Fathema_0615.pdf)

- Giray, L., De Silos, P. Y., Adonis Adornado, Jan, R., Galas, E., Reyes-Chua, E., Santiago, C., & Ma. Leah Ulanday. (2024). Use and Impact of Artificial Intelligence in Philippine Higher Education: Reflections from Instructors and Administrators. *Internet Reference Services Quarterly*, 28(3), 1–24. <https://doi.org/10.1080/10875301.2024.2352746>
- Jin, Y., Yan, L., Echeverria, V., Gašević, D., & Martinez-Maldonado, R. (2024). Generative AI in Higher Education: a Global Perspective of Institutional Adoption Policies and Guidelines. *Computers and Education: Artificial Intelligence*, 8, 100348. <https://doi.org/10.1016/j.caeai.2024.100348>
- Maimela, C. and Mbonde, P. (2025). Artificial intelligence in South African universities: curriculum transformation and decolonisation—aid or obstacle?. <https://www.frontiersin.org/journals/sociology/articles/10.3389/fsoc.2025.1543471/full>
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press. <https://smhp.psych.ucla.edu/pdfdocs/systemic/rogers%20diffusion.pdf>
- Samoli, S., Lopez Cobo, M., Gomez Gutierrez, E., De Prato, G., Martinez-Plumed, F. and Delipetrev, B., AI WATCH. *Defining Artificial Intelligence*, EUR 30117 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-17045-7, doi:10.2760/382730, JRC118163.
- Sutedjo, A., Liu, S. P., & Chowdhury, M. (2025). Generative AI in higher education: A cross-institutional study on faculty preparation and resources. *Studies in Technology Enhanced Learning*, 4(1). <https://doi.org/10.21428/8c225f6e.955a547e>
- UNESCO. (2019). *Artificial intelligence in education: Compendium of promising initiatives*. UNESCO. <https://unesdoc.unesco.org/ark:/48223/pf0000370307>
- Wang, H., Fu, T., Du, Y., Gao, W., Huang, K., Liu, Z., Chandak, P., Liu, S., Van Katwyk, P., Deac, A., Anandkumar, A., Bergen, K., Gomes, C. P., Ho, S., Kohli, P., Lasenby, J., Leskovec, J., Liu, T.-Y., Manrai, A., & Marks, D. (2023). Scientific discovery in the age of artificial intelligence. *Nature*, 620(7972), 47–60. <https://doi.org/10.1038/s41586-023-06221-2>
- Weill, P. D., & Ross, J. W. (2004). (PDF) *IT Governance: How Top Performers Manage IT Decision Rights for Superior Results*. ResearchGate. [https://www.researchgate.net/publication/236973378\\_IT\\_Governance\\_How\\_Top\\_Performers\\_Manage\\_IT\\_Decision\\_Rights\\_for\\_Superior\\_Results](https://www.researchgate.net/publication/236973378_IT_Governance_How_Top_Performers_Manage_IT_Decision_Rights_for_Superior_Results)
- Yusuf, A., Pervin, N., & Román-González, M. (2024). Generative AI and the future of higher education: A threat to academic integrity or reformation? Evidence from multicultural perspectives. *International Journal of Educational Technology in Higher Education*, 21(1), 1–29. <https://doi.org/10.1186/s41239-024-00453-6>
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education*, 16(1), 1–27. <https://doi.org/10.1186/s41239-019-0171-0>

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Corresponding author: [chris.gonzales154@gmail.com](mailto:chris.gonzales154@gmail.com)

