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RESEARCH ARTICLE

Comparative Analysis of Binary Accreditation Frameworks and Institutional Quality Determinants in Global Higher Education

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Abstract

This article presents an overview of a comparative secondary-data and documentary analysis of two binary accreditation models in global higher education. As such, India will serve as a model of reform within the context of these broader trends. In addition, this comparative documentary analysis examines hypothesized transitions from legacy graded accreditation systems to binary accreditation systems. A new set of 10 binary attributes is being proposed to reform the existing accreditation process. In so doing, the proposed binary framework will utilize different metrics (59 universities, 56 autonomous colleges, 46 affiliated colleges) and a six year reaccreditation cycle. Globally, the UK eliminated their university/polytechnic binary divide in 1992 and has implemented data-driven risk based regulation utilizing six annual data sets for purposes of continued quality monitoring in England. The comparative analysis demonstrates that the structure of the binary framework design is aligned with propositions that the binary framework can expand the potential for participating in accreditation processes and emphasizes measurable institutional quality indicators more than legacy graded systems. Therefore, it appears that binary accreditation models may increase initial level participation rates and emphasize measurable institutional quality determinants; however, since this study is limited to comparative documentary analysis and therefore does not establish post-implementation causality, no conclusions should be drawn regarding post-implementation causality.

Keywords: Binary accreditation, Higher education, Quality assurance, Institutional quality, Governance, Documentary analysis, Comparative policy analysis.

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1. Introduction

Since the 1980s there has been an unprecedented growth in the number of quality assurance (QA) mechanisms within higher education systems world-wide. The rise of quality assurance was made possible by the emergence of quality assurance as one of the most important functions of institutional governance as well as a major driver of the drive toward excellence and accountability in academia [7], [14]. At both the programmatic and institutional levels, accreditation has become a key mechanism to secure public trust, provide a benchmark against which performance can be evaluated, and promote ongoing improvements in performance [1]-[3], [19]. The literature provides substantial evidence regarding the multi-dimensional nature of QA including the structure and functioning of governing bodies; the engagement with stakeholders; the use of digital data; and the development of measurable results [1], [2], [5], [8], [11], [12]. While there is considerable research into the components of quality assurance processes, one component remains understudied: namely how grading schemes are used in accrediting institutions (i.e. whether graded systems (e.g. letter grades, numeric ratings), or simple binary systems (e.g. "pass/fail") are employed) [29], [32],

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[33]. Although graded systems are designed to encourage performance and excellence through differentiation, they can also create bureaucratic barriers, increase the burden associated with accreditation, and limit participation from resource-poor institutions [9], [20], [21]. As such, many countries are exploring or have adopted accreditation systems based solely on binary criteria ("accredited" vs. "not accredited"), using threshold-based, verifiable standards in order to decrease entry costs for participating institutions, reduce the time required for review cycles, and expand access to QA processes [48], [49]. Therefore this trend represents a paradigmatic shift in accreditation philosophies that deserves rigorous analysis utilizing empirical evidence.

The Indian higher education system offers a very valuable case study for such a review. India's institutionally based higher education landscape is one of the largest and most complex globally with over 1,168 universities; 45,473 colleges; and 12,002 independent institutions for a total of 58,643 institutions according to the All India Survey on Higher Education [50]. However, the extent to which the current graded accreditation scheme administered by the National Assessment and Accreditation Council (NAAC) is able to cover the entire scope of the higher education institutional landscape is significantly limited. As reported by official Ministry of Education statistics, of the 1,219 degree awarding institutions, only 447 or 36.67% had received accreditation from NAAC as of September 2023; similarly, of the 43,796 colleges registered within the AISHE database, only 9,479 or 21.64% had achieved NAAC accreditation at the time of reporting [48]. In terms of AISHE registered institutions (including stand-alone institutions that do not require institutional accreditation through NAAC) the vast majority remain unaffiliated with any type of quality assurance program, creating significant gaps in the quality assurance framework and raising issues related to the system's ability to ensure standards throughout an increasingly large and diverse sector [21], [48]. In response to these challenges the government of India has proposed a transformational approach toward a binary accreditation model. A proposed framework would consist of ten binary characteristics and employ distinct metrics (59 for universities; 56 for autonomous colleges; and 46 for affiliated colleges) along with a required re-accreditation cycle of six years [48], [49]. With respect to process complexity, this explicit model clearly defines the parameters of institutional focus and limits institutional resources to achieving a defined number of documentable and threshold-based quality measures and represents a clear departure from the legacy graded model.

The evolution of quality assurance systems globally is characterized by an increasing interest in threshold-based and data-driven regulatory approaches [39], [42], [43]. For instance, the quality assurance agency (QAA) in the UK uses six sets of yearly data as its primary source of information to conduct a risk-based assessment of institutions [52]. Although this approach does not represent a complete binary accreditation model, it represents an accreditation model based on meeting specific benchmark criteria similar to other binary models. There are numerous comparative studies throughout the world that show how diverse the designs of quality assurance systems can be, and how differently they affect institutions. For example, research conducted by private universities in Tanzania showed that the programmatic quality of programs was affected substantially by the clearness and measurability of the guidelines within the quality assurance framework [5]. An empirical study using stakeholders as a sample population in Kazakhstan found that there were challenges associated with complex and resource intensive processes associated with quality assurance, thus advocating for streamlining [8]. Technological institutes in Mexico were competing with each other and experiencing inequality due to accreditation indicators that represented graded performance pressure [20]. Similarly, issues related to standardization vs. Institutional diversity have been documented in Chile, where the mandatory elements of the accreditation process were changing the debate about quality [4], and in Ghana and New Zealand, comparative policy analyses demonstrated that streamlined, evidence-based measures facilitated more effective quality assurance [18]. A common theme exists among these examples; namely, the operational design of accreditation frameworks affects the way institutions participate in accreditation processes, behave as institutions, and view the legitimacy of quality assurance. Broader reviews also support that QA systems will function best when governance systems establish clear and obtainable standards and when the supporting data infrastructure allows for transparency and documentation of evaluations [2], [6], [15], [24].

In addition, within this global perspective, the proposed Indian binary reform initiative corresponds to what appears to be a developing policy paradigm that emphasizes the importance of both simplification and contestability over the importance of both complexity and hierarchical ordering. As has been observed in other countries, India's current grading system (which includes graduated scoring bands), while intended to evaluate quality, is perceived to encourage a 'compliance' culture in higher education institutions and create an administrative burden without necessarily resulting in proportional advances in teaching and research [17], [22]. Similar critiques can also be identified in the international literature regarding accreditation bureaucracies; such systems may impede innovation due to the perception that the bureaucratic processes involved in them are routine, ritualistic exercises that do not add-value to the development of higher education institutions [9], [19]. By transitioning from a graded system to a binary attributes based evaluation model, it is anticipated by Indian policymakers that they will eliminate many of the procedural barriers presently experienced by higher education institutions and include a greater number of higher education institutions - including those located in rural or under-resourced locations - into the quality assurance process. Documentable, metric-based thresholds are employed in the new framework to provide evidence of institutional quality beyond mere assertions of such quality; this approach is supported by research published recently on the factors affecting the effectiveness of QA systems [2], [17]. Furthermore, the use of a six year review cycle reflects a continued interest in sustaining institutional engagement in the evaluation process, reflecting a departure from previous accreditation models that allowed extended periods between evaluations [49].

The fact that a significant body of academic literature

exists on QA, specifically in higher education, does little to fill the current research void. When we aggregate the most recent literature, it is clear that although the majority of research focuses on Outcomes/Performance, Digital/Data Utilization, Stakeholders Interests, and Governance; very few comparative analyses exist using actual data comparing binary accreditation models to their graded counterparts. An aggregated bank of 47 relevant peer reviewed articles over the years 2012–2026 with 95.7% having DOIs and 68.1% being published in the year 2024–2026 illustrate how contemporary and extensive QA related scholarship has become [1], [47]. The Outcomes/Performance theme is represented in 93.6% of the papers, Digital/Data in 91.5% of the papers, Stakeholders in 68.1% of the papers, and Governance in 66.0% of the papers, however, none of these contributions make a direct comparison of the unique documentary characteristics of binary accreditation reforms as presented in the proposed Indian framework. Furthermore, no previous contributions provide a comparative structure assessing whether these binary frameworks would result in significantly different approaches than existing graded systems to increase access and measure quality. These findings are particularly concerning since India's policy change could potentially impact tens of thousands of educational institutions and possibly influence educational policies for similar large scale HE systems throughout the Global South. Thus, this research provides a structured, pre-implementation document-based evaluation establishing comparative international evidence based platform for India's policy change and provides an initial empirical base for further inquiry into its implementation.

This study will bridge the existing gap by comparing the secondary data and documentary analyses. Based upon a review of governmental policy documents, government reports, and an assessment of relevant academic research, this study compares the foundational elements of binary accreditation frameworks (the primary case of India) with those of legacy graded systems within a broader international context. A significant value exists to this research inquiry, as it may provide policymakers, accreditation organizations, and institutional decision-makers with comparative documentation to aid in developing structured aspects of accreditation models and inform evidence-based reform prior to large-scale implementation. With a focus on two distinct variables-the scope of possible participant involvement and the emphasis placed on quantifiable institutional performance indicators-this study offers a framework to evaluate empirically whether or not the hypothesized benefits associated with binary accreditation exist at the level of comparative documentary evaluation.

2. Objectives and hypotheses

2.1. Objectives of the study

- To identify similarities in how a select number of higher education quality assurance organizations use three aspects of accreditation (binary accreditation, threshold compliance, and post-accreditation progression) for institutions in their respective countries/regions.
- To examine if higher education institutions that have transitioned from graded systems to binary accreditation systems have placed greater emphasis on quality factors which are quantifiable such as governance, staff size, campus facilities, and graduation rates.

2.2. Hypotheses

Hypothesis pair-1

H_{01}**:** Higher education institutions that have implemented binary accreditation will have no significant increase in potential access to accreditation compared with those that remain under graded accreditation systems.

H_{11}**:** Institutions implementing binary accreditation systems will have an increased opportunity for access to accreditation compared to those that continue under graded accreditation systems due to reduced administrative burden, shortened review cycles and increased opportunities at lower levels [48, 49].

Hypothesis pair-2

H_{02}**:** Higher education institutions transitioning from graded systems to binary accreditation systems will not emphasize quantitative measures of quality significantly more than graded systems.

H_{12}**:** Higher education institutions transitioning from graded systems to binary accreditation systems will emphasize quantitative measures of quality significantly more than graded systems based on an explicit reliance upon threshold-based, verifiable criteria [1, 2, 17, 48, 49].

3. Literature review

The QA scholarship space has grown significantly since the 1980s due to growing demand for accountability and international recognition [7], [14]. Research comparing quality assurance systems in Ghana, New Zealand, Kazakhstan, and the South Caucasus showed that each country's QA architecture is designed differently, however, all countries share similar QA functions of licensing, auditing, and improving [8], [18], [35]. Research demonstrated that the key factors affecting the success of quality assurance include the level of support provided by senior management, the technical ability of staff, and the availability of appropriate infrastructure [2]. In addition, comparative research conducted in Tanzania, India, Mexico, and the Philippines confirmed that accreditation frameworks influence program quality based on how well defined and quantifiable the criteria for accreditation are [5], [17], [20], [27]. Similarly, research into governance indicates that successful internal QA relies heavily on senior management support and that excessive bureaucracy can limit an institution's sense of ownership over QA processes [9], [26], [31], [40]. Institutional credibility is also influenced by the transparency in communicating QA results; using simple "yes/no" determinations creates a clear public signal but may unfairly stigmatize institutions that do not meet expectations. Therefore, transitioning these institutions back to meeting expectations will require additional transitional resources [8], [10]- [12], [34], [44]. Advances in technology

are revolutionizing how quality monitoring is performed.

With the emergence of artificial intelligence (AI)-assisted evaluation and large data sets for analysis and decision-making, QA practices are becoming increasingly dependent upon big data analytics [16], [25]. For example, the QA Agency for higher education in England uses a six-dataset risk-based regulatory approach to continuously monitor evidence-based oversight and is considered to be different from but conceptually related to threshold-based accreditation models [52]. However, this emphasis on continuous quality improvement research suggests that simply reporting a simple "pass" or "fail" may eliminate external motivators associated with receiving grades and create an environment that emphasizes developmentally focused feedback and action planning [13], [24], [36], [38]. An important distinction exists between structured binary systems (i.e., the UK polytechnic/University division eliminated in 1992 [51]) versus binary accreditation outcomes used within a unified system. Proposed reforms in India target the latter by adding a pass/fail designation to existing accreditation process and creating a layered structure of 58,643 diverse entities without changing institutional type [50]. Collectively the body of QA scholarship emphasized outcomes, digital evidence, governance, and stakeholder involvement as the four primary domains along which the proposed binary framework articulates its logic of reform. Additionally, the strands of governance and continuous improvement added greater specificity to these domains. From a governance perspective researchers conceptualized good university governance through risk management perspectives and audit practices. Effective internal QA was shown to be supported by governance structures that integrate quality culture throughout institutional activities [26], [31]. Similarly accreditation serves as a trigger for internal organizational changes however perceptions of it as being imposed by outside authorities can hinder the internalization of quality values [9].

Studies on ISO 21001:2018 and leadership in Indonesian Islamic higher education demonstrate that management system standards and transformational leadership both enhance stakeholder engagement and promote continued improvement [28], [30], [31]. Empirical documentation of accreditation's impact on governance has been reported in Oman whereby quality assurance bodies were shown to improve university governance practices through channels of legitimacy and stakeholder theory [40]. On continuous improvement studies of Caribbean Medical Schools and NAAC Indicators for Indian universities demonstrate that accreditation does not ensure improvement unless followed by post-accreditation action planning and faculty engagement [13], [17]. Thus binary systems that eliminate graded incentives must be accompanied by required developmental feedback and publicly available reports of sub-indicator performance to encourage actual quality enhancements rather than superficial compliance [24], [38], [46].

4. Materials and methods

4.1. Design and source base

In this study we utilize a comparative-documentary research approach to analyze binary accreditation reform in the global higher education sector, with India serving as a pro-active reform case situated in an international context. This comparative-design utilizes two primary documentary streams. Stream one represents a curated collection of peer-reviewed and professional literature related to quality assurance, accreditation and institution-wide performance in post-secondary education. There are 47 documents included in stream one [47]. Stream two comprises the official government policy papers, statistical publications and comparative reports that provide quantifiable evidence regarding the Indian binary-reform structure, systemic reforms over time and data-driven regulatory approaches [48], [52].

Comparatively speaking, we draw on two axes. The first axis will compare the structural characteristics of the proposed Indian binary accreditation structure with the current graded accreditation model. We will base our analysis on the design specifications of the proposed Indian binary structure as well as on systemic level data and statistics [48], [50]. The second axis will contrast the documented emphases found in the global literature corpus with the logic used to develop indicators for the reform. By doing so, we situate the Indian reform case within the major themes of recent scholarship focusing on quality assurance. Historical examples include the removal of the binary divide in the U.K. in 1992 [51] and emerging trends toward using data-driven risk based quality regulations in England [52], providing us with additional comparative standards to interpret reform directions while avoiding any implication of policy borrowing.

4.2. Construction of corpus and content coding

We constructed our corpus of 47 documents through systematic searches utilizing academic databases and institutional repositories and selected those items that directly addressed quality assurance systems, accreditation mechanisms or determinants of post-secondary institutional performance. Our selection criteria did not restrict inclusion by date of publication nor geographic location; however, our resultant corpus has a pronounced temporal element: approximately 68.1% (32 out of 47) of the corpus was produced during the period 2024–2026, and approximately 95.7% (45 out of 47) of the corpus has a Digital Object Identifier (DOI), suggesting that they all represent formally published works. The corpus is diverse in terms of discipline and national focus and includes both empirical studies and conceptual frameworks; it may also be described bibliometrically as having a mean API reported citation count of 7.3, a median of 2 and a maximum of 87 [47].

A descriptive content-coding approach was applied to the entire database to identify thematic frequency, and to provide documentary evidence supporting the hypothesis-testing methodology. All documents were coded to assess the presence of five mutually exclusive themes: (1) Outcomes/Institutional Performance, (2) Digital/Data systems, (3) Stakeholders/Roles & Perspectives, (4) Governance/Regulatory arrangements, and (5) Material Resources/Infrastructure. Coding was conducted using the manifest content method; a theme was recorded as present when the document contained substantive discussion of the specified thematic area within the context of Quality Assur-

ance/Accreditation. The thematic distribution indicates that

(i) Outcomes/Performance themes appeared in 93.6% ($n = 44$ out of $n = 47$);
(ii) Digital/Data themes appeared in 91.5% ($n = 43$ out of $n = 47$);
(iii) Stakeholder themes appeared in 68.1% ($n = 32$ out of $n = 47$);
(iv) Governance themes appeared in 66.0% ($n = 31$ out of $n = 47$); and
(v) Resource/Infrastructure themes appeared in 38.3% ($n = 18$ out of $n = 47$).

These counts represent the extent of thematic representation in the corpus used to compare the potential reform logics.

4.3. Documentary hypothesis testing methodology and limitations of inference

The article presents two pairs of hypotheses, each consisting of a null and an alternative, and conducts hypothesis testing at a documentary comparative level. Due to the fact that verified data are represented by policy counts, corpus theme frequencies, and system-level statistics, the tests conducted are comparative in nature and do not involve inferential statistical analysis. Therefore, due to the lack of post-implementation outcome measurement data regarding the implementation of the Indian Binary Reform model, analysis is limited to assessing documented design capability and evidence-based alignment. Thus, rejection of the null hypotheses occurs at a documentary comparative level only in terms of documented design alignment; it does not constitute proof of post-implementation causality or realized outcome improvements.

Although the corpus has international origins, it was not obtained via systematic random sampling of all quality assurance literature, and country-specific factors beyond the Indian case are considered only through selected comparative anchor points. Therefore, generalization of findings to other regulatory environments requires consideration of both the institutional and policy specificities of each environment. Additionally, thematic content coding was performed based on manifest thematic presence rather than latent semantic depth; thus, resulting thematic count data are used solely as comparative descriptors, rather than measures of causal importance. Collectively, these limitations position the study's contributions at the nexus of documentary synthesis and reform evaluation, where it may inform policy decision-making processes; however, it will not replace empirical assessments of subsequent implementation impacts. Moreover, since the Indian case represents a reform case "in process," as opposed to having achieved its desired outcomes; therefore, the analysis reflects intended capabilities versus actual effects.

4.4. Documentary comparative hypothesis testing approach

This research article develops two pairs of hypotheses each comprising a null and an alternative, and tests them at a comparative level based on documentary evidence. Since data verification consists of policy counts, corpus theme frequencies and system-level statistics as opposed to harmonized panel datasets, tests are comparative in nature and no statistical inference procedures were employed. Post-implementation outcome measurement data is unavailable for the Indian Binary Reform; hence, analyses are limited to assessing documented design potential and evidence-based alignment within the policy materials.

One pair of hypotheses relates to accreditation participation. The null hypothesis (H_{01}) stipulates that binary accreditation reform models do not expand accreditation participation options beyond those offered under legacy graded systems. The alternative hypothesis (H_{11}) posits that binary accreditation reform models will increase accreditation participation options relative to legacy graded systems by decreasing procedural barriers, shortening review cycles, and increasing eligibility for lower levels of accreditation [48], [49]. Documentary evidence for this pair of hypotheses includes the reform model documentation as well as official system counts. At the reference date (September 30th 2023), India's higher education landscape comprised 1,168 universities; 45,473 colleges; and 12,002 stand-alone institutions for a total of 58,643 registered entities [50]. According to Ministry of Education official data documenting degree-granting institutions eligible for accreditation: 447 degree-granting institutions (36.67% of 1,219 degree-granting institutions) had earned NAAC accreditation; and 9,479 colleges (21.64% of 43,796 colleges) had earned NAAC accreditation [48]. Together, these statistics demonstrate that the vast majority of institutions across all categories continue to fall outside formal quality assurance [48]- [50]. The proposed binary accreditation model offers 10 binary attributes; differentiated institution-type metrics (59 for universities; 56 for autonomous colleges; and 46 for affiliated colleges); and a standardized reaccreditation interval of six years [48], [49]. Both the binary attributes and differentiated numeric metrics in the binary accreditation model are designed to reduce procedural complexity and facilitate the accession of previously unaccredited institutions into the quality assurance system; and, on this comparative basis at least, documentary evidence supports rejecting H_{01} in favor of H_{11}.

The second pair of hypotheses addresses whether binary accreditation reform models emphasize measurable institutional quality determinants to a greater extent than legacy graded systems. H_{02} states that binary accreditation reform models do not emphasize measurable institutional quality determinants to a greater extent than legacy graded systems; while H_{12} states that binary accreditation reform models emphasize measurable institutional quality determinants more than legacy graded systems. This is accomplished by binary accreditation reform models' reliance upon threshold-based documentable indicators [1], [2], [17]. There are two lines of documentary evidence presented for this pair of hypotheses. First, India's reform documentation focuses upon a set of binary attributes and differentiated numeric metrics that utilize a threshold logic based upon verifiable institutional data [48], [49]. Secondly, corpus analysis demonstrates that 93.6% of academic and professional literature emphasizes outcomes/performance as core aspects of contemporary quality assurance discourse; and that 91.5% utilizes digital/data infrastructures [1], [47]; suggesting that measurable quality determinants are common throughout the larger documentary record. Alignment

between the reform's structural indicators and thematic priorities demonstrated in the global literature corpus provides documentary support for rejecting H_{02}.

5. Results

5.1. Coverage and the participation gap of baseline accreditation

This documentary analysis relied on a database of 47 academic and policy-based articles. The corpus presents a significant amount of contemporary coverage: 32 out of the 47 articles (68.1 %) were printed after 2024, so this study's perspective aligns with the present wave of quality assurance studies [1], [47]. Practically the whole body of research is traceable online; 45 out of the 47 documents (95.7%) contain live DOIs [1], [47], where possible. The number of citations per paper varied from zero to a high of eighty-seven. The mean was seven point three citations and the median was two citations [1], [47]. Since the distribution was significantly skewed, it appears that a small cluster of articles received substantially greater attention than did the others. It also illustrates that most of the articles studied had few citations because they were recently written and have no chance to accumulate many citations at this time - an analytical portrayal of assessing a new reform proposal during its design and consultation phases. A coded structure of the 47 documents into the five thematic areas resulted in the pattern illustrated in Table 4. The two most frequent themes were outcomes and institutional performance (44 articles, or 93.6 %), and digital tools, data structures, and analyses (43 articles, or 91.5 %) [1], [47]. The almost universal co-occurrence of these two themes shows that the contemporary quality assurance discourse has become focused on measuring tangible products, and using evidence derived from systematic uses of quantitative data. Engagement with stakeholders was identified in thirty-two articles (68.1 %), and governance was identified in thirty-one articles (66.0 %). Thus, the issues concerning who will lead/steer the agencies, what their legitimacy will be, and how decisions will be made continue to be paramount [1], [47].

Resources and infrastructure was the least frequently mentioned category, being cited in eighteen articles (38.3 %) [1], [47]. Therefore, the literature is predominantly one that values measurable results, digital capabilities, and accountable participation over input based physical logic - both of which relate to the hypotheses tested below. The empirical context for studying India's current higher education landscape can be found in the All India Survey on higher education 2021–22 and in the government's official documentation of its higher education reforms. These provide the empirical foundation for testing whether the proposed binary accreditation system would function effectively within the existing higher education environment. The higher education landscape consists of 1,168 universities, 45,473 colleges, and 12,002 independent institutions. In total there are 58,643 registered entities [50]. Of these, according to the Ministry of Education's reform document as well as the All India Survey on higher education 2021–2022, 447 of 1219 degree-granting institutions (36.67 %) and 9479 of 43,796 colleges (21.64 %) hold accreditation through the National Assessment and Accreditation Council (NAAC) as of September 2023 [48]. These numbers illustrate that nearly all institutions within each institutional category remain outside of the formal quality assurance framework. These figures are provided in Table 3.

This degree of disparity in the number of institutions is far from a mere artefact of how we count, but rather it represents a fundamental characteristic of a system in which the pre-existing, graded accreditation process has failed to attract the overwhelming proportion of the institutions. The amount of asymmetry is significantly larger in the university and stand-alone institution categories due to their massive numerical weighting in the system. Even at the level of the university, less than one-half have completed some type of accreditation assessment which demonstrates how limited the current model is in terms of reach. As mentioned above, the reforms being evaluated will view this coverage deficit as the principal challenge to be overcome and will develop its binary logic explicitly because of this deficiency [48], [49].

5.2. Design characteristics of proposed reforms: Binary attributes, and differentiated metric measurement

The core component of the proposed reforms is the substitution of the previously employed multi-tiered graded framework with a new framework based upon ten binary characteristics. Each of these characteristics must be satisfied by an institution before it can receive the designation of "accredited" [48]. The attributes are operationalized using a variety of quantitative measurement tools such as: 59 different metrics used for universities, 56 for independent colleges, and 46 for affiliated colleges [48]. A three tiered measurement tool structure was designed into the proposed reforms so as to account for the various organizational forms present throughout India's higher education system. It also provides a method for providing context sensitive evaluations through the use of standardized measurements. In addition to the three tiered metric measurement structure, the reforms propose a six year re-accreditation cycle. By doing so they provide a consistent time frame to evaluate whether or not institutions comply with the regulations of the accreditation process [49]. The design elements of the reforms are summarized below in Table 4.

A significant advantage of the binary form of the evaluation criteria (i.e., pass/fail on all ten criteria) over an evaluation system based on a graded scale (which would require fine distinctions across multiple levels of quality) is that it reduces the complexity associated with determining compliance. The proponents of the reforms assert that this reduced complexity results in lower bureaucratic burdens on institutions, shorter accreditation cycles, and an expanded gateway for new entrants, including those institutions that have had limited access to higher education resources and therefore limited administrative capabilities to pursue complex grading rubrics [48], [49].

5.3. Hypothesis testing - comparative-documentary analysis of H_{01} and H_{11}.

The first null hypothesis (H_{01}) states that binary accreditation reform frameworks do not contribute to greater

Table 1: Quantitative anchors used in the binary accreditation analysis.

Indicator	**Verified value**	**Interpretive use**
Universities in India	1,168	System-scale anchor for accreditation coverage analysis [50].
Colleges in India	45,473	Represents the largest institutional component under higher education regulation [50].
Standalone institutions in India	12,002	Completes the national higher education denominator [50].
Total registered entities	58,643	Calculated from AISHE institutional statistics [50].
Accredited HEIs	447 degree-awarding institutions; 9,479 colleges [48].	Provides the legacy accreditation numerator for coverage assessment.
Accredited universities	447 of 1,219 institutions (36.67%) [48].	University-level accreditation coverage.
Accredited share of all entities	36.67% (degree-awarding institutions); 21.64% (colleges) [48].	Derived from AISHE and NAAC statistics [48], [50].
Entities outside accreditation	Majority of the 58,643 AISHE institutions remain outside formal accreditation [48], [50].	Represents the estimated national accreditation gap.
Accredited share of universities	36.67% (447 of 1,219 degree-awarding institutions) [48].	Confirms institutional accreditation coverage.
Binary attributes	10	Represents the determinant-based accreditation architecture [48].
Metrics by institution type	59 / 56 / 46	Differentiated evidence framework for institutional categories [48].
Reaccreditation periodicity	6 years	Supports the threshold-plus-cycle quality assurance framework [49].

opportunities for participation in accreditation compared to legacy graded systems. The alternative (H_{11}), on the other hand, argues that binary design contributes to increased participation due to lower procedural barriers, faster cycles, and wider entry points into the system [48], [49]. An analysis of the reform blue print, baseline coverage data, and comparative literature in the bank, conducted at the same time, leads to the rejection of H_{01}.

The evidence supporting this conclusion consists of three interconnected findings. First, baseline coverage shows that most institutions are excluded from accreditation under the current graded system. Of the total number of 1,219 degree-granting institutions in India, only 447 (36.67%) were NAAC accredited as of September 2023. Additionally, of the total number of colleges in India (43,796), only 9,479 (21.64%) held NAAC accreditation as of September 2023 [48], [50]. The low levels of coverage cannot be solely explained by differences in institutional quality among participants; they result largely from the high barriers created by legacy evaluation architectures that require significant amounts of time and process. By setting forth a plan to lower the procedural bar (the reform reduces the accreditation determination down to 10 binary criteria as opposed to a range of letter grades), the reform directly addresses one of the main participation barriers [48]. Second, the six year re-accreditation schedule offers a predictable, shorter cycle, which may help minimize administrative delays associated with legacy processes [49]. Third, comparative studies of other systems provide insight to the extent that the UK eliminated its binary classification between universities and polytechnics in 1992. The removal of this structural distinction effectively altered both participation and status dynamics in the higher education sector [51]. Although the policy context is different, precedent exists to indicate that the removal of barriers to institutional categorization can lead to increased participation.

In aggregate form, the documentary evidence clearly demonstrates that the binary design was developed with the intention to increase access to accreditation for additional institutions. It is not asserted that the reform has resulted in increased participation - yet; no post implementation data exist - however, based upon comparisons with previously documented coverage deficits and statements made by designers, the design logic is consistent with mechanisms for expanding participation as described in H_{11}. Therefore, within limits established by comparative-documentary reasoning, the available evidence is consistent with H_{11} and does not support H_{01}.

5.4. Hypothesis testing - comparative-documentary evaluation of H_{02} and H_{12}

The second null hypothesis (H_{02}) states that binary-accredited reform frameworks do not contribute to greater opportunities for participation in accreditation compared to legacy graded systems. The alternative (H_{12}) posits that the binary framework places greater emphasis on measurable institutional quality determinants using threshold-based, documentable indicators [1], [2], [17], [48], [49]. Based upon an evaluation of the propositions at a documentary comparative level - the simultaneous examination of the reform blueprint, baseline coverage data, and comparative literature contained in the bank - evidence supports rejecting H_{02}.

There are two independent lines of evidence leading to this conclusion. The first is architectural and is inherent in the design of the reform. The ten binary criteria used in the reform are defined through a combination of up to 59 university-specific metrics, 56 college-specific metrics for

autonomous colleges, and 46 college-specific metrics for affiliated colleges [48]. Each of these metrics is threshold-based - an institution must meet each criterion prior to receiving accreditation. Therefore, the reform shifts the evaluative logic from a relative, peer-anchored grading spectrum to an absolute, criterion referenced-threshold model that emphasizes verifiable data about institutions. Consequently, such a structure is inherently more focused on discrete measurable determinants - graduation rates, curriculum documents, faculty credentials, digital infrastructure data - than a system allowing for a holistic judgment of letter grade categories.

The second line of evidence is thematic and is derived from the literature bank. As presented in Table 2, themes related to outcomes and institutional performance and digital/data are present in 93.6% and 91.5% of the articles respectively. These represent a significantly larger proportion than resources/infrastructure (38.3%) [1], [47]. This preponderance represents a clear consensus within quality assurance literature that accountability should be based on documented performance outputs and data-driven monitoring. The use of a differentiated metric set within the Indian reform conforms to this literature. Examples include analyses of quality indicators used by NAAC for Indian universities between 2018 and 2022 which demonstrated that documentable curricular/research/infrastructure indicators are central to assessing institutions [17]. Similar comparative studies regarding determinants of governance and quality assurance emphasized the importance of measurable inputs such as management support and infrastructure quality that impact institutional performance [1], [2]. The binary framework conditions accreditation on meeting a specified list of document-intensive thresholds, thereby operationalizing this emphasis.

Additional supportive evidence from the broader regulatory environment further supports the trend towards data-intensive/threshold-based quality management. The QA agency for higher education in England uses data from six annual datasets to inform their oversight activities using a continuous risk-based monitoring approach [52]. In contrast to this English model which continuously monitors risk based on data and not using a binary accreditation model; it illustrates that regulatory systems internationally are increasingly adopting routine collection and use of data as the spine of quality governance - a trend consistent with India's binary threshold logic [45], [52]. Thus, the proposed Indian binary accreditation model linking accreditation status to 10 demonstrable attributes aligns with this direction of travel. Thus at a comparative-documentary level, the reform design reflects an increased focus on measurable institutional quality determinants relative to the legacy multi-graded framework being replaced. The documentary evidence is thus consistent with H_{12}; therefore the design logic does not support H_{02}.

6. Discussion

The primary purpose of this documentary comparative analysis is to examine whether the new binary accreditation reforms will differ from the old graded legacy system for accrediting degrees awarded by Higher Education Institutions (HEIs). In order to do so, we selected India's proposed Framework for Accreditation of higher educational institutions as our case study. Our results show that nearly all of the authors of the 47 papers included in our sample of academic literature (93.6%) emphasize outcomes and performance; digital and data infrastructures (91.5%); stakeholder dimensions (68.1%); and governance arrangements (66.0%) – exactly the four areas along which binary accreditation reforms are currently being designed. Our documentary evidence is consistent with two alternative hypotheses regarding the binary framework's design features: H_{11} states that the design features of the binary framework involve fewer procedures; shorter cycles times; and higher levels of participation; H_{12} states that the design features of the binary framework involve explicit threshold-based measures; documentable indicators; and measurable quality assurance [1], [2], [17], [48], [49].

India's proposed framework of 10 binary attributes; differentiated metrics (59/56/46); six year reaccreditation periods – contrasts greatly with India's current grading system, where only 36.67% of degree awarding HEIs (i.e., 447 out of 1,219 HEIs) had NAAC accreditation by September 2023, and only 21.64% of Colleges (i.e., 9,479 out of 43,796 colleges) had NAAC accreditation as of September 2023 [48], [50]. Thus, at the level of policy design, the coverage deficit is not simply a matter of administration but a structural exclusion that diminishes the possibility of achieving quality assurances.

A binary accreditation system can thus be interpreted not as a decline in quality differentiation, but as a strategic reorganization in terms of participation, measurability and continuous evidence. As opposed to graded systems which produce a reputation economy based on marginally different grades [9], [14], [22], a binary decision causes an institution to focus its efforts on documenting that it meets minimum standards. Additionally, the proposed difference in the number of metric scores used for college affiliations (46), autonomous colleges (56), and universities (59) indicates that this framework does not apply a uniform evidentiary requirement to various types of institutions; instead, it adjusts the amount of documentation required to be submitted in relation to institutional type and complexity – a principle supported by comparative evidence on QA system design [1], [2], [18]. Furthermore, the QAA's six dataset risk-based monitoring in England represents another area in which continuous quality governance has become data intensive [52]; whereas the UK's abolition of the polytechnic / university distinction in 1992 provides an illustration of how reducing institutional classification reduces barriers to participation [51].

In addition to policymakers, binary decisions have unique implications for other stakeholders. Graded systems often create a reputational economy in which small differences in grades result in excessive institutional attention and resource allocation to achieve marginal improvements in grade rather than actual quality enhancements [9], [14], [22]. Instead, a binary decision clarifies the public signals as a basic trustworthy threshold. Consequently, institutional resources may shift from pursuing minor improvements in grade to ensuring and documenting threshold standards. The large number of articles examining stakeholder issues from the evidence bank (32 articles, 68.1%) indicates that Quality Assurance is increasingly viewed as a social or-

Table 2: Documentary hypothesis testing for H_{01} and H_{11}.

Test Item	**Verified Observation**	**Inference for H_{11}**	**Decision**
Legacy coverage level	447 of 1,219 degree-awarding institutions (36.67%) and 9,479 of 43,796 colleges (21.64%) are accredited [48].	The low accreditation coverage supports the need for expanding participation through a simplified accreditation framework.	Supports H_{11}
Institutions outside accreditation	A large majority of the 58,643 AISHE institutions remain outside formal quality assurance coverage [48, 50].	The substantial uncovered institutional base strengthens the need for a lower-burden threshold entry mechanism.	Supports H_{11}
Operational reform features	The revised framework introduces shorter accreditation cycles, reduced fees, and eliminates physical peer-team visits [48].	These reforms directly reduce procedural complexity and institutional burden.	Supports H_{11}
Post-threshold design	A six-year accreditation cycle together with MBGL progression is incorporated into the revised framework [49].	Broader participation is complemented by continuous quality progression rather than one-time accreditation.	Supports H_{11}
Documentary outcome	The combined evidence from accreditation coverage and burden-reduction mechanisms.	The documentary evidence supports rejection of the null hypothesis at the comparative analysis level.	Reject H_{01}

Table 3: Documentary hypothesis testing for H_{02} and H_{12}.

Test item	**Verified observation**	**Inference for H_{12}**	**Decision**
Reform architecture	10 binary attributes and 59/56/46 metrics [48].	Framework explicitly organizes measurable institutional determinants.	Supports H_{12}
Literature-bank outcomes theme	44 of 47 papers.	Outcome visibility is central in the research evidence.	Supports H_{12}
Literature-bank digital/data theme	43 of 47 papers.	Evidence systems and analytics are repeatedly treated as quality determinants.	Supports H_{12}
Literature-bank governance theme	31 of 47 papers.	Governance is consistently linked with accreditation quality.	Supports H_{12}
Documentary outcome	Determinant architecture together with literature evidence.	H_{02} is rejected at the documentary-comparative level.	Reject H_{02}

Table 4: Descriptive profile of the 47-paper trusted literature bank.

Measure	**Value**	**Interpretive use**
Total papers	47	Meets the required reference floor.
References with DOI metadata	45 (95.7%)	High traceability of the source base.
Papers from 2024–2026	32 (68.1%)	Strong current-reform orientation.
Outcomes/performance theme	44 papers	Links accreditation to institutional outputs.
Digital/data theme	43 papers	Links accreditation to evidence systems.
Stakeholder theme	32 papers	Keeps legitimacy and reception in view.
Governance theme	31 papers	Supports determinant-based interpretation.

ganizational process and not solely a regulatory artifact [8], [10], [11], [15]. However, the creation of an 'either/or' accredited/nothing accredited dichotomy could potentially cause negative stigma effects for institutions that fail to meet threshold standards. These effects would need to be mitigated through transparent transitional pathways and supportive development programs [40], [44].

Binary systems also allow for continuous quality improvement over time. However, this depends on the design of the reaccreditation cycle and supporting data infrastructure. The proposed six-year duration creates a natural rhythm for HEI reviews while providing enough time to avoid audit fatigue [49]. During that time frame, the binary determination acts as a gate keeping function. Improvements must occur internally through HEI Quality Assurance Systems. The documentary record emphasizes management support; infrastructure quality; and employee engagement as determinants of QA system success [2], [5], [8], [15], [37].

By removing multi-grade band distractions from HEI activity, a binary system can direct institutional attention toward these determinants and provide incentives for institutional improvement by linking reaccreditation status to measurable and documented improvements. There is a legitimate concern that binary accreditation systems could degenerate into pure compliance processes. This concern

must be addressed through intentional mechanisms such as mandatory institutional improvement plans for institutions that only narrowly pass the threshold; publicly disclosing sub-indicator performances; and capacity building support [48]. Comparative evidence suggests that binary accreditation reforms are most effective at stimulating meaningful improvements when embedded in a comprehensive quality environment that promotes formative development; data-informed institutional improvement; and summative judgments [24], [38].

Comparatively evaluating India's reform in governance contexts requires distinguishing between structurally organized binary systems and binary accreditation outputs. The UK's abolition of the polytechnic/university divide was a structural transformation of institutional categories; it was not an accreditation reform [51]. Conversely, this binary accreditation model does not separate institutions by their mission or legal forms; instead it applies identical threshold-based evaluations to a wide variety of universities; autonomous colleges; and affiliated colleges - thereby preserving institutional diversity while establishing a common evidence base for evaluating quality assurance [48]. The significant presence of governance related topics among the thematic codes applied to the paper bank (31 papers, 66.0%) underscores that governance design is central to successful QA system implementation [23], [31], [40], [41]. Because no post-implementation data are available for India's reform at present, this analytical work is limited by intended use (documentary intent) - therefore causal assertions regarding realized increases in participation rates or quality improvements cannot be made. Subsequent research should evaluate these hypotheses empirically through longitudinal participation rate data; longitudinal trend data regarding institutional quality indicator measurements; and future longitudinal surveys measuring stakeholders' perceptions regarding binary reform implementations.

7. Conclusion

This comparative documentary evaluation integrated evidence from an intentional sample of 47 sources, along with relevant Indian government policy documentation [48], [49], [50] and international benchmarking reports [51], [52] to assess the proposed accreditation reform initiative in India based upon the binary model. By using documentary comparative thinking, we analyzed evidence supporting two competing hypothesis pairs. The first hypothesis pair (H_{01}/H_{11}) assessed whether the proposed binary accreditation reform frameworks will increase the capacity of academic institutions to participate in accreditation processes compared to legacy graded systems. The second hypothesis pair (H_{02}/H_{12}) assessed whether such frameworks would include greater emphasis on empirically measured institutional quality determinants. Consistent with both alternative hypotheses, the evidence found in this comparative documentary analysis provides evidence supporting both alternative hypotheses.

The current Indian reform proposes replacing an 8-point grade scale with a set of 10 binary attributes. Additionally, it includes different sets of metrics to measure institutional quality - 59 for universities, 56 for autonomous colleges, and 46 for affiliated colleges – alongside a six-year reaccreditation cycle [48], [49]. In contrast to the previous grading system used in India where less than half (36.67%) of degree-granting institutions (447 of 1,219), and approximately one-quarter (21.64%) of all colleges (9,479 of 43,796) had received NAAC accreditation as of September 2023, most institutions remained without formal quality assurance [48], [50]. Documentation provided for the new reform indicates the development of a structure designed to expand entry into the accredited status pool by reducing the number of steps required to gain accreditation, decreasing the time needed to complete each step of the accreditation process, and by developing a participation floor based upon a threshold [48], [49]. Literature also shows that moving away from resource-intensive, graded accreditation systems towards inclusive, threshold-based systems can increase opportunities for participation [1], [2], [17]; therefore H_{11} is supported.

In terms of empirically measuring institutional quality determinants, the use of documentable, threshold-linked indicators in the development of the 10 binary attributes signals an intention to focus more on empirical quality measurement [48], [49]. This increased focus on empirical quality measurement is also reflected in the paper bank. Specifically, 93.6% of the sources reference outcomes or performance, 91.5% reference digital and data related issues, and 66.0% reference governance. International trends also reflect this increasing trend toward empirical quality measurement; for instance, the UK eliminated the university/polytechnic binary divide in 1992 [51], and England's quality regulatory framework subsequently developed data-driven risk-based oversight drawing on six annually collected datasets [52]. Therefore, documentary evidence supports H_{12}.

One significant caveat is necessary. The findings reported here are based solely on documented intent and secondary data. Thus, since the proposed accreditation reform has yet to occur (i.e., it is at the proposal stage), there is no existing data regarding how well the proposed reforms may meet their objectives of expanding access to accredited programs or improving quality.

The paper contributes in two important respects. First, it develops and applies a systematic documentary comparative analytical framework to link an actual binary accreditation design to the theoretical dual promises of expanded participation and enhanced reliance on empirically measured institutional quality determinants. Second, the paper positions this reform discussion within a relatively rich and recent body of evidence – 68.1% of the paper bank were published during the period 2024–2026 – showing that this study is timely and providing a pre-reform baseline against which future empirical studies examining post-reform performance will be able to compare results. For those involved in designing policies for accreditation agencies or institutional leadership roles; this study provides comparative documentary evidence concerning the structural characteristics of accreditation design including the architectural differences between threshold-based, documentable indicator systems and graded-scale frameworks. For researchers who wish to evaluate post-reform performance measures for the proposed Indian binary reform, this study provides a baseline against which future research

will be able to compare results once data becomes available regarding post-reform performance. More broadly, the implications for large-scale higher education systems are that binary accreditation can serve as a viable mechanism for balancing the dual imperatives of expanding access to higher education programs and enhancing institutional quality accountability if such systems are implemented in conjunction with a strong data infrastructure and some form of support to assist institutions near the threshold in meeting minimum requirements.

Although this research does not consider whether the new system will result in an increase in student enrollment or improve quality, it does provide several types of evidence supporting H_{12} (i.e., the use of binary accreditation is linked to a focus on empirically-measurable quality). First, each of the 10 binary quality determinants identified by the authors has been transformed into documentable measures with threshold values, thereby providing a clear link to a focus on empirically-measurable quality. Second, 93.6% of all articles cited in the paper bank mention either outcomes/quality/performance and/or digital/data/governance and/or governance issues related to universities. Third, the majority of these articles were recently written (a total of 68.1% were published between 2024–2026), and they present a significant amount of evidence in support of a focus on empirically-measurable quality. Fourth, international trends also suggest that many countries have moved away from using the binary model. In the UK, for example, the binary distinction was eliminated in 1992; since then, academic quality is assessed via a combination of 6 annual datasets. Finally, although a formal evaluation of India's proposed binary accreditation system has not yet taken place, documentation provided by the authors provides some evidence supporting H_{12}. A major caveat should be noted, however. Because no performance data currently exists regarding how well universities participating in the program are performing after implementation of the new accreditation system, no causal claims can be made about potential increases in participation or improvement in university quality.

This paper contributes to existing literature in three ways. First, it presents a systematic documentary comparative framework that links a specific binary accreditation design (the one developed for India) to both the theoretical promises of improved access to higher education and improved reliability on measurable institutional quality determinants. Second, it positions this current debate in the context of recent high-quality evidence from other countries. As such, it serves as a timely and empirical baseline for evaluating future empirical studies conducted after data from the Indian binary reform becomes available. Lastly, the paper may serve as useful evidence for policymakers, accreditation bodies, and institutional leaders interested in learning more about how different structural features of accreditation designs affect quality assurance processes.

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CRediT authorship contribution statement

Babu Gopal: Conceptualization, Investigation, Data collection, Data curation, Original draft & editing. **Sandeep E**: Formal analysis.

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