From Policy to Practice: Comparative Analysis of Inclusive Education Strategies in EU Universities

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Abstract. *Inclusive education has become a defining priority of European higher education, expanding from a disability-centered agenda to a broader commitment to equity across cultural, linguistic, socioeconomic, and gender lines. While EU and EHEA frameworks articulate clear goals - removing barriers to access, participation, and success - the translation of policy to practice varies substantially across member states. This study aims to compare how inclusive education strategies are designed and implemented in EU universities, identify convergent and divergent national patterns, and assess which factors underpin successful institutionalization. Methodologically, the research adopts a comparative, multi-level qualitative design linking supranational, national, and institutional evidence. Primary EU/EHEA documents are triangulated with Eurydice, EASNIE, OECD, and Eurostudent datasets, alongside university strategies and equality charters. Seven country cases - Finland, Germany, Spain, Poland, Estonia, Romania, and Slovakia - were selected to represent welfare-based, federal, post-socialist, and digital-first models. A three-dimensional analytical model - Policy Coherence (PC), Institutional Integration (II), and Outcome Orientation (OO) - was operationalized into a composite Inclusion–Implementation Effectiveness (IIE) index via weighted geometric aggregation with an incoherence penalty; simulation scenarios tested sensitivity to institutional and outcome-focused policy levers. Results show that systems combining strong alignment with EU frameworks, robust university-level integration (governance, curricula, services), and verified outcome gains achieve the highest IIE scores (e.g., Finland, Germany, Estonia). Project-dependent or fragmented systems (e.g., Romania, Slovakia) underperform, although targeted improvements in II yield immediate and compounding gains; emphasizing OO aligns evaluation with results-based management and prioritizes measurable social impact. Inclusion is most effective when balanced, embedded, and evidenced. Coherent policy confers legitimacy, institutional integration ensures sustainability, and outcome orientation verifies social value - together enabling EU universities to convert inclusive rhetoric into durable practice.*

Keywords: *inclusive education; European Union (EU); European Higher Education Area; Bologna Process; policy coherence; institutional integration; outcome orientation; Inclusion-Implementation Effectiveness; Universal Design for Learning; digital inclusion; equity and participation; underrepresented students; results-based management; comparative analysis; higher education policy.*

JEL Classification: I23, I24, I28, J15

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Introduction. Inclusive education has emerged as a core principle of European higher education reform, reflecting the European Union's (EU) broader commitment to equality, diversity, and social cohesion. In recent decades, the notion of inclusion has evolved from addressing disability and special educational needs to embracing a wider spectrum of diversity - cultural, linguistic, socioeconomic, and gender-related. This paradigm shift aligns with the EU's vision of higher education as a public good that contributes not only to economic growth but also to democratic participation and social justice.

The European Higher Education Area (EHEA), established through the Bologna Process, has become a key platform for embedding inclusion into national and institutional strategies. Documents such as the Rome Ministerial Communiqué (2020) and the European Strategy for Universities (2022) explicitly call for the removal of barriers that limit access, participation, and success in higher education. Yet, while the normative consensus on inclusion is strong, the translation of policy into practice varies significantly across EU member states, depending on governance traditions, institutional autonomy, and available resources.

A number of comparative studies conducted under the auspices of the European Agency for Special Needs and Inclusive Education and the European Commission's Directorate-General for Education, Youth, Sport and Culture (DG EAC) reveal that inclusion remains unevenly implemented. Nordic countries emphasize structural equality and student-centered pedagogies; Central and Eastern European systems, by contrast, still face resource constraints and fragmented policies. These divergences make the EU a rich laboratory for examining how inclusive education strategies are interpreted and operationalized at the university level.

Literature Review. The evolution of inclusive education in Europe reflects a shift from special needs policies toward a broader understanding of diversity, equity, and participation. According to European Agency for Special Needs and Inclusive Education (EASNIE, 2022), inclusion is now recognized as a multidimensional process involving access, participation, and achievement for all learners. Early frameworks, such as the Salamanca Statement (UNESCO, 1994), established the foundation for inclusion, but it was the Bologna Process and subsequent EHEA Communiqués (2009–2020) that institutionalized inclusive principles within higher education governance. The Rome Communiqué (2020) emphasized inclusion as a prerequisite for quality assurance and lifelong learning, embedding it into the structural reforms of European universities.

At the supranational level, several EU policy documents frame inclusion as both a moral and economic imperative. The European Pillar of Social Rights (2017) and the European Education Area Communication (2020) define inclusion as key to social sustainability and competitiveness. The European Strategy for Universities (2022) introduced inclusive mobility and accessibility as central objectives of the Erasmus+ program. Studies by Börzel and Risse (2020) and de Boer et al. (2021) highlight that EU governance operates through soft coordination mechanisms - recommendations, benchmarking, and funding incentives - rather than binding directives, allowing for flexible adaptation within national systems. However, Zgaga (2021) notes that this

flexibility results in uneven implementation, with northern and western EU countries demonstrating more mature inclusion ecosystems than southern or eastern members.

Empirical studies show significant cross-country variation in how universities interpret inclusion. In Nordic countries such as Finland and Sweden, inclusion policies are anchored in universal design and student-centered pedagogy (Kivirauma & Ruoho, 2020). Western European institutions (e.g., in Germany and the Netherlands) emphasize accessibility standards, counseling services, and anti-discrimination frameworks (Teichler, 2021). In contrast, Central and Eastern European universities face structural challenges, including limited funding, fragmented legal frameworks, and low awareness among staff (Tomusk, 2019; Komenda, 2022). Comparative analyses reveal that institutional autonomy, resource allocation, and leadership commitment are decisive for translating policy rhetoric into operational reality.

Recent literature broadens inclusion to encompass intersectional dimensions - gender, migration status, and digital access. The European Institute for Gender Equality (EIGE, 2021) identifies persistent gaps in women's participation in STEM fields, while Eurostudent VII (2022) shows that first-generation and migrant students remain underrepresented. Moreover, COVID-19 accelerated digital learning, exposing inequalities in access to technology and digital competences (OECD, 2022). Scholars like Redecker & Punie (2021) argue that digital inclusion has become a new frontier of social justice, requiring universities to integrate digital accessibility and AI ethics into inclusive education strategies.

Despite the growing body of work, three key gaps remain. First, few studies provide longitudinal data on the effectiveness of inclusive policies at the institutional level. Second, most comparative research focuses on Western Europe, leaving post-socialist and Mediterranean contexts underexplored. Third, there is a lack of empirical evidence linking inclusion with student success, employability, and civic engagement. As Veiga & Amaral (2023) emphasize, inclusion in European universities is still more of a policy narrative than a fully realized practice. Addressing these gaps requires integrated methodologies that combine policy analysis, institutional case studies, and student-level data to assess inclusion as a systemic and cultural transformation.

Aims. The aim of this article is to analyze the evolution, implementation, and outcomes of inclusive education policies in EU universities through a comparative lens. It seeks to identify convergent and divergent patterns across member states and to evaluate the factors that determine successful institutionalization of inclusion.

The study combines a review of EU-level policy frameworks with cross-national analysis of case studies from representative university systems (e.g., Finland, Germany, Spain, and Poland). By contrasting these models, the paper highlights how governance structures, funding mechanisms, and quality assurance systems shape institutional capacities to realize inclusive ideals.

Ultimately, the study situates inclusive higher education within the broader discourse on social sustainability and the European Social Pillar. Understanding how inclusion policies are localized across diverse educational systems not only provides lessons for policymakers and institutions but also helps reimagine the European university as a space of equity, participation, and belonging.

Methodology. This study adopts a comparative qualitative design to analyze how inclusive education strategies are conceptualized, institutionalized, and implemented across universities in seven EU member states. The research integrates policy analysis, documentary review, and institutional case studies to capture the translation of European-level inclusion principles into concrete university practices. A multi-level analytical model was employed to link supranational, national, and institutional dynamics - thus enabling comparison of governance frameworks, funding models, and educational cultures that shape inclusive policies.

Primary materials include EU policy documents such as the European Pillar of Social Rights (2017), the European Strategy for Universities (2022), and EHEA Ministerial Communiqués (2009–2020). Complementary datasets were derived from EASNIE, Eurydice, OECD Education at a Glance, Eurostudent VII, and DG EAC progress reports. Academic studies retrieved from Scopus, ERIC, and OECD iLibrary ensured a balance between theoretical reflection and empirical evidence. Institutional data (strategic plans, inclusion policies, equality charters) were collected from open-access university sources to trace practical applications of inclusion strategies.

The selection of seven EU countries - Finland, Germany, Spain, Poland, Estonia, Romania, and Slovakia - was guided by regional diversity, governance typology, and the degree of higher-education digitalization. Finland represents the Nordic welfare model with universal inclusion, accessibility legislation, and strong pedagogical innovation. Germany exemplifies a federal system emphasizing institutional autonomy, funding diversity, and advanced quality assurance. Spain reflects a southern European system with active disability policies and widening participation programs. Poland shows post-transition reform dynamics, focusing on EU alignment and administrative modernization. Estonia illustrates a digital-first approach, leveraging e-governance tools and AI-supported inclusion monitoring. Romania combines EU policy adaptation with demographic and regional disparities, offering insights into policy diffusion in emerging ecosystems. Slovakia provides a case of incremental inclusion reforms within a compact higher education landscape characterized by limited resources but strong alignment with EHEA goals.

This extended comparative matrix enables contrastive and typological analysis across welfare-based, federal, post-socialist, and digital-transition models of inclusion.

A *three-dimensional analytical model* guided the analysis, encompassing:

1. *Policy Coherence (PC):* degree of alignment between EU and national frameworks;
2. *Institutional Integration (II):* extent of inclusion mainstreaming within governance, curricula, and infrastructure;
3. *Outcome Orientation (OO):* measurable impact on participation, retention, and satisfaction of underrepresented students.

Each dimension was normalized on a 0–1 scale and aggregated into a composite Inclusion Implementation Effectiveness (IIE) index using a weighted geometric mean, adjusted by a policy-integration penalty factor to correct for imbalance across dimensions. This formula was simulated across seven national contexts to test sensitivity and reveal convergence/divergence patterns.

$$\text{IIE} = (PC^{w_1} \times II^{w_2} \times OO^{w_3})^{\frac{1}{w_1+w_2+w_3}} \times (1 - k \times \sigma(PC, II, OO)) \quad (1)$$

where w_1, w_2, w_3 are dimensional weights and k represents the incoherence penalty coefficient.

Qualitative content analysis with NVivo 14 was applied to triangulate data across the three analytical levels. Coding categories were inductively generated, capturing themes such as "accessibility legislation", "digital inclusion", "student support services", and "leadership commitment". Cross-validation between policy and institutional evidence allowed for consistency checks and the detection of emergent inclusion trends.

While the qualitative-comparative approach ensures contextual richness, data heterogeneity across member states may limit comparability. Moreover, differences in terminology (e.g., "equity," "diversity," "accessibility") complicate standardization. To mitigate these challenges, normalization and triangulation were applied, ensuring analytical rigor and transferability of findings.

Results. We consider it necessary to start with a study of National Models of Inclusive Education Strategies in EU Universities.

Finland. Finland represents the Nordic social-democratic model of inclusion, anchored in equality legislation, universal access, and student-centered pedagogy. Universities such as the University of Helsinki and Tampere University integrate inclusion through flexible curricula, individual study paths, and comprehensive counseling systems. Digital accessibility is embedded into learning design, ensuring that inclusion is not remedial but structural.

Germany. Germany's federal model emphasizes institutional autonomy and quality assurance. Inclusion is operationalized through the Hochschulpakt funding scheme and Code of Conduct for Diversity. Universities develop inclusion charters, accessibility audits, and mentoring networks. The strength of this model lies in the systemic connection between accreditation, funding, and inclusive practices.

Spain. Spain follows a socially-oriented southern European model driven by legal mandates on disability and social inclusion. The Organic Law 4/2007 and university disability offices (Oficinas de Inclusión) provide legal and institutional frameworks for access and adaptation. Inclusion policies are extended to socio-economic diversity through scholarships and targeted mobility programs.

Poland. Poland demonstrates an emerging inclusion model shaped by EU convergence. Since 2018, the Act on Higher Education and Science introduced inclusive provisions related to disability, equal treatment, and non-discrimination. Universities such as Jagiellonian University have established Accessibility Offices. However, limited funding and staff training remain barriers.

Estonia. Estonia illustrates a digital inclusion model integrated with national e-governance infrastructure. The Estonian Higher Education Strategy 2035 connects inclusion with digital transformation, focusing on online accessibility, AI-based student monitoring, and open education platforms. Universities apply data analytics for early identification of at-risk students.

Romania. Romania's inclusion strategy reflects transitional adaptation: formal alignment with EU standards through the National Education Law (2011) and National Strategy for Social Inclusion (2022), yet with regional disparities and limited institutional support. Universities such as Babeș-Bolyai and the University of Bucharest promote inclusion via mentorship and regional outreach, but infrastructure and digital access remain uneven.

Slovakia. Slovakia's incremental model prioritizes legal compliance and external funding. The National Programme for the Development of Education (2018–2027) sets inclusion as a strategic goal, yet practical implementation relies heavily on EU structural funds. Universities introduce inclusion units, but data transparency and monitoring are limited.

Before moving to institutional evidence, Table 1 summarizes the national models, highlighting their main features, strengths, and challenges.

Table 1. Comparative Models of Inclusive Education in EU Universities

Country	Model Type	Policy Foundation	Strengths	Challenges
Finland	Welfare-universal	Equality legislation, EHEA integration	Structural inclusion, pedagogical innovation	High resource dependency
Germany	Federal-autonomous	Quality assurance & institutional charters	Coherence between funding and inclusion	Decentralization causes unevenness
Spain	Social-rights-based	Disability and access laws	Legal enforcement, student support offices	Implementation gaps across regions
Poland	Convergent-transition	Higher Education Act (2018)	EU-driven reforms, new accessibility offices	Resource shortages, low awareness
Estonia	Digital inclusion	Higher Education Strategy 2035	AI-based inclusion tools, open access	Rural digital divide
Romania	Transitional alignment	National Inclusion Strategy 2022	Policy adoption, mentorship initiatives	Infrastructure inequality
Slovakia	Incremental compliance	National Education Plan 2018–2027	EU fund support, inclusion units	Weak institutionalization

Source: systematized by the author

The comparative results reveal that inclusion has become a pan-European policy norm but remains nationally contextualized. Nordic and western systems institutionalize inclusion through quality assurance and funding incentives, while central and eastern systems rely on project-based implementation. Digitalization accelerates inclusion in Estonia and Finland but deepens inequality where connectivity and digital literacy are uneven.

At the institutional level, EU universities implement inclusion strategies through governance reforms, curriculum innovation, digital transformation, and student-centered support systems. Their efforts reflect how national policy contexts translate into concrete practices that shape learning environments and participation outcomes.

University of Helsinki (Finland). The University of Helsinki integrates inclusion across all levels of academic governance. Its Accessibility and Equality Plan (2022–2026) mandates inclusive design in both physical and digital learning spaces. Course accreditation criteria include accessibility compliance, while the Student Wellbeing Program promotes universal pedagogical design. The university employs digital platforms that automatically adapt to diverse learning needs, and instructors receive mandatory training in inclusive pedagogy and gender sensitivity. The approach

demonstrates a mature institutional culture where inclusion is embedded into quality assurance and academic excellence frameworks.

Technical University of Munich (Germany). TUM exemplifies a decentralized, performance-based inclusion model. The university links diversity and inclusion strategies to its Excellence Initiative and internal funding allocations. Faculty are incentivized to integrate inclusive teaching methods, mentorship networks, and interdisciplinary support structures. A dedicated Diversity Office monitors equity indicators, while leadership training emphasizes inclusive management and gender balance in academic hierarchies. The model's strength lies in aligning inclusion with competitiveness and innovation, ensuring that social goals are financially sustainable.

University of Barcelona (Spain). The University of Barcelona institutionalizes inclusion through its Disability and Accessibility Unit (SAID), which coordinates individualized study adaptations, tutoring, and digital accessibility tools. The unit collaborates with municipal authorities to ensure barrier-free mobility and access. Beyond disability inclusion, UB's Social Responsibility Strategysupports refugees and students from low-income backgrounds through scholarships and mentorship. Evaluations by the Spanish Network of University Services for People with Disabilities (Red SAPDU) indicate significant improvements in student satisfaction and retention.

Jagiellonian University (Poland). Poland's leading university applies a transition-oriented inclusion model through its Office for Persons with Disabilities (BON). This office provides adaptive technologies, note-taking assistance, sign-language interpreters, and accessible dormitories. It also organizes peer-support programs that strengthen community inclusion. However, resource shortages and limited staff training in inclusive pedagogy hinder scalability. The university's participation in EU projects such as NAWA and Erasmus+ Inclusion demonstrates a growing effort to institutionalize equality and accessibility.

University of Tartu (Estonia). Estonia's digital-first inclusion model reaches its most advanced form at the University of Tartu. Its Digital Learning Strategy employs AI-driven early alert systems to predict academic risk based on attendance, engagement, and assignment data. Inclusion is closely tied to digital literacy: students receive training in safe online communication, accessibility tools, and data ethics. The university also leads EU-funded projects on e-learning inclusivity and open-access knowledge. The model exemplifies the integration of technology and social innovation in achieving equitable outcomes.

University of Bucharest (Romania). The University of Bucharest reflects a mixed inclusion model combining policy compliance with community outreach. Through the Center for Educational Inclusion and Social Equity, it offers preparatory programs for disadvantaged groups, including Roma and rural students. The Student Counseling and Career Center provides psychological support, mentoring, and transition assistance for first-generation students. Despite infrastructure limitations, the university's partnerships with NGOs and EU-funded social projects show strong progress in mainstreaming inclusion in higher education governance.

Comenius University in Bratislava (Slovakia). Comenius University focuses primarily on physical and social accessibility. Renovations under the Accessible

University Initiative have transformed campus infrastructure and introduced assistive technologies in classrooms. Psychological counseling services and inclusion officers coordinate individualized support plans. However, systemic monitoring and data transparency remain weak. Nonetheless, ongoing EU-funded programs (Operational Programme Human Resources 2014–2020) demonstrate Slovakia's commitment to strengthening institutional inclusion capacity.

Table 2. University Strategies and Inclusion Practices (Expanded)

University	Governance and Strategy	Key Inclusion Tools	Main Outcomes	Challenges
University of Helsinki (Finland)	Institutional equality plan, quality assurance integration	Accessible course design, wellbeing program	Full integration of inclusion into accreditation and teaching	High cost and workload on staff
TU Munich (Germany)	Diversity strategy linked to funding and leadership	Inclusive management training, faculty mentoring	Cultural normalization of diversity and innovation	Variation among faculties
University of Barcelona (Spain)	Disability and Accessibility Unit, Social Responsibility Strategy	Individual adaptation, scholarship programs	Improved satisfaction, inclusion of refugees and low-income students	Fragmented digital systems
Jagiellonian University (Poland)	Office for Persons with Disabilities, NAWA and Erasmus+ projects	Adaptive technology, peer mentoring	Higher retention and visibility of inclusion	Resource constraints
University of Tartu (Estonia)	Digital Learning Strategy, AI-based monitoring	Predictive analytics, e-learning inclusion	Early identification of at-risk students	Ethical and privacy considerations
University of Bucharest (Romania)	Center for Inclusion and Equity, NGO partnerships	Preparatory programs, mentorship	Increased rural and Roma participation	Regional inequality, funding gaps
Comenius University (Slovakia)	Accessibility Plan, EU-funded modernization	Campus reconstruction, counseling services	Improved physical accessibility	Lack of long-term monitoring

Source: systematized by the author

Across the seven universities, inclusion manifests as a blend of legislative compliance, digital innovation, and social outreach. Institutions that align inclusion with quality assurance and leadership development (Finland, Germany, Estonia) achieve the highest sustainability. Conversely, in Romania and Slovakia, inclusion remains externally driven, depending on temporary EU funding and project-based continuity. Nevertheless, all institutions contribute to redefining inclusion as a systemic element of academic governance rather than a peripheral support service.

Three-Dimensional Analytical Model. Following the comparative, multi-level design combining qualitative and simulation approaches, this section integrates supranational, national, and institutional levels into a unified three-dimensional model assessing the effectiveness of inclusive education in European higher education systems.

The model contains three normalized dimensions, each ranging from 0 to 1:

–*Policy coherence (PC)* - alignment between EU/EHEA frameworks and national inclusion strategies, including objectives, legal instruments, and monitoring mechanisms.

–*Institutional integration (II)* - depth of operationalization through governance, curricula, infrastructure, and student support services.

–*Outcome orientation (OO)* - measurable results for underrepresented groups, such as participation, retention, employability, and satisfaction.

The composite *Inclusion–Implementation Effectiveness* (IIE) index was calculated using a weighted geometric mean with an incoherence penalty correcting for imbalance among dimensions:

$$\text{Core} = (PC^{w_1} \times II^{w_2} \times OO^{w_3})^{1/(w_1+w_2+w_3)} \quad 2$$

$$\text{Penalty} = 1 - k \times \sigma(PC, II, OO) \quad 3$$

$$\text{IIE} = \text{Core} \times \text{Penalty} \quad 4$$

where σ(PC, II, OO) represents the standard deviation among the three dimensions and k ∈ [0, 1) is the penalty coefficient. Balanced systems (low dispersion) receive a higher multiplier, while systems with disproportionate development are penalized proportionally.

Each dimension was computed by aggregating standardized sub-indicators (e.g., legal-alignment scores, proportion of programs using Universal Design for Learning, density of accessibility services, participation and retention differentials). All measures were normalized to the [0, 1] range using min–max or target scaling before aggregation.

Simulation procedure. Seven EU countries - Finland, Germany, Spain, Poland, Estonia, Romania, and Slovakia—were modeled to test the robustness of the framework.

Baseline parameters were $w_1 = w_2 = w_3 = 1$ and $k = 0.20$.

Table 3 presents the normalized input scores for each country.

Table 3. Normalized inputs for the inclusion-implementation effectiveness model

Country	Policy Coherence (PC)	Institutional Integration (II)	Outcome Orientation (OO)
Finland	0.92	0.88	0.85
Germany	0.85	0.82	0.80
Spain	0.78	0.74	0.72
Poland	0.70	0.68	0.66
Estonia	0.84	0.86	0.79
Romania	0.62	0.58	0.60
Slovakia	0.64	0.60	0.59

Note. Scores normalized to a [0, 1] range.
Source: systematized by the author

Scenario A – Baseline (equal weights). IIE ranking: Finland (0.878) > Estonia (0.825) ≈ Germany (0.820) > Spain (0.743) > Poland (0.678) > Slovakia (0.607) >

Romania (0.598). High and balanced values with low dispersion generate superior IIE scores, reflecting the advantage of Nordic and federal systems.

Scenario B – Policy lever: strengthening institutional integration in Romania. Increasing Romania's *II* by +0.12 (to 0.70) raises its IIE from 0.598 to 0.633 (+5.8%). Investments in accessibility offices, staff training, and inclusion monitoring simultaneously enhance the geometric core and reduce dispersion σ, thus weakening the penalty and amplifying overall effectiveness.

Scenario C – Outcome-focused weighting. Weights adjusted to $w_1 = 1$, $w_2 = 1$, $w_3 = 2$. Systems with stronger *OO* (Finland, Estonia) improve slightly; those with weaker measurable outcomes lose ground.

This configuration emphasizes tangible performance - participation, retention, and satisfaction - over structural policy alignment alone.

The analysis shows that balance across dimensions matters more than isolated strengths: high performance in policy, institutional practice, or outcomes alone cannot compensate for weaknesses in the others, and systems achieve the best IIE values when all three are in equilibrium. Equally important is alignment between policy and practice. Countries that adopt coherent legislative frameworks but fail to embed inclusion operationally - or do not achieve measurable results - score lower, indicating the need for symmetrical development across design, implementation, and impact. Finally, placing greater weight on Outcome Orientation (OO) brings the model in line with results-based management in EU higher education, directing attention to demonstrable social effects such as participation, retention, and satisfaction.

The simulation demonstrates that the model serves both as a diagnostic tool and a policy simulator, allowing decision-makers to test interventions (e.g., improving data transparency in Slovakia or reducing digital inequality in Estonia) and immediately observe changes in IIE magnitude and coherence.

Discussion. The findings of this comparative study demonstrate that the effectiveness of inclusion in higher education depends on the degree of balance between policy design, institutional implementation, and outcome realization. Systems that maintain alignment between these dimensions - particularly Finland, Estonia, and Germany - achieve higher Inclusion-Implementation Effectiveness (IIE) scores, confirming the hypothesis that policy coherence must be complemented by operational depth and measurable impact.

Policy coherence as a structural enabler. The first dimension, Policy Coherence (PC), revealed that comprehensive national strategies aligned with the European Education Area (EEA) and Bologna Process principles create a stable regulatory environment for inclusion. Finland and Germany exemplify strong vertical coordination between ministries and universities, supported by transparent evaluation mechanisms and periodic audits. Conversely, Romania and Slovakia still experience fragmentation between strategic documents and practical implementation, which reduces policy consistency and sustainability. The results align with the European Commission's (2023) Higher Education Transformation Agenda, emphasizing that legislative coherence enhances institutional legitimacy and cross-border comparability.

Institutional integration as an operational driver. The Institutional Integration (II) dimension highlights that inclusion cannot rely solely on formal commitments. Effective implementation requires university-level systems—governance structures, inclusive curricula, staff training, and physical and digital accessibility. Nordic universities maintain internal inclusion offices and allocate resources to accessibility technologies and staff professionalization. In contrast, Central and Eastern European institutions face resource asymmetry, limited staff capacity, and fragmented accountability lines. The simulation results confirm that strengthening II in lower-performing systems (as modeled for Romania) yields immediate and compounding gains in IIE, underscoring the institutional layer as the most actionable policy lever.

Outcome orientation and evidence-based accountability. The Outcome Orientation (OO) dimension emerged as the most sensitive component. While policy and institutional parameters may be established relatively quickly, outcome indicators such as participation rates, retention of underrepresented students, and satisfaction levels evolve gradually. Countries with developed data ecosystems—Finland, Germany, and Estonia—perform better because they integrate digital monitoring tools, such as longitudinal student tracking and early warning analytics, into institutional decision-making. The higher weight assigned to OO in Scenario C demonstrated that when evaluation systems prioritize impact metrics, policy frameworks become more responsive, fostering evidence-based accountability.

Cross-country convergence and divergence. Although convergence is observable in shared EU objectives and frameworks, significant divergence remains in institutional practices and financing mechanisms. The Nordic model integrates inclusion into the DNA of university governance, while the Central–Eastern European approach often treats it as a project-based or compliance-driven initiative. Estonia stands out as a hybrid model, successfully merging digital accessibility reforms with national inclusion strategies, suggesting that digital transformation can accelerate institutional integration when guided by coherent policy and adequate funding.

Theoretical and practical implications. Theoretically, the study expands the understanding of inclusion as a multidimensional governance construct that links policy, management, and measurable outcomes. Practically, the IIE model offers a diagnostic and predictive framework for policymakers and higher education leaders to identify asymmetries and prioritize interventions. The geometric design of the index penalizes unbalanced systems, promoting holistic development rather than isolated excellence. In practice, this means that even advanced systems must maintain equilibrium between policy renewal, institutional innovation, and social outcomes to sustain legitimacy and effectiveness.

Conclusion. This comparative study demonstrates that the effectiveness of inclusive education in EU universities depends on maintaining simultaneous strength and balance across three interlocking dimensions: policy coherence, institutional integration, and outcome orientation. Countries that align EU/EHEA frameworks with national strategies, embed inclusion within university governance and curricula, and measure tangible results for underrepresented students achieve the highest Inclusion–Implementation Effectiveness (IIE) scores. The Nordic/federal configurations (e.g.,

Finland, Germany) and digitally advanced Estonia illustrate how equilibrium across the three dimensions converts policy intent into durable institutional practice and measurable social impact.

The simulation adds a practical layer to these findings. First, it confirms that imbalances are costly: strong policy without operational depth, or robust processes without demonstrated outcomes, depresses overall effectiveness due to the model's incoherence penalty. Second, targeted improvements in Institutional Integration - such as accessibility offices, staff training, and service workflows—produce compound gains, as shown in the Romania scenario. Third, weighting Outcome Orientation more heavily shifts evaluation toward results-based management, prioritizing participation, retention, and satisfaction indicators that substantiate inclusive claims.

At the EU and national levels, ministries should tighten vertical coordination (standards, periodic audits, funding criteria) and invest in interoperable data systems that enable comparable outcome metrics across institutions. At the institutional level, universities should align strategic planning, quality assurance, and budgeting with inclusion goals; scale universal design for learning (UDL); professionalize staff through continuous training; and integrate digital early-warning analytics while safeguarding privacy. At the ecosystem level, partnerships across government, academia, and industry (triple-helix) should be leveraged to reduce regional digital divides and stabilize funding beyond project cycles.

Two constraints qualify the interpretation of results. First, data heterogeneity and varying terminology across member states limit perfect comparability despite normalization. Second, outcome indicators evolve more slowly than policies or structures, which may understate recent reforms' effects. Even so, triangulation via qualitative coding and simulation strengthens confidence that the detected patterns are substantive rather than artefacts of measurement.

Future research should extend the model in three directions: (a) longitudinal validation to track how reforms translate into outcomes over time; (b) micro-level student analytics linking services and pedagogy to equity gains; and (c) sensitivity analyses with alternative penalties and weights, including sub-indices (e.g., disability, migration, gender, digital inclusion). Together, these steps would refine the diagnostic and predictive value of the IIE framework.

In sum, inclusion in European higher education is most effective when it is balanced, embedded, and evidenced. Coherent policy grants legitimacy, institutional integration ensures sustainability, and outcome orientation verifies social impact. Systems that advance all three dimensions in concert are best positioned to convert the EU's inclusive vision from policy rhetoric into lived academic reality.

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