Mapping the Governance Landscape of Artificial Intelligence Through OECD Policy Analysis

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ABSTRACT

As artificial intelligence (AI) continues to transform economies, public institutions, and societal systems, the demand for robust and inclusive governance frameworks has become increasingly urgent. This study analyzes 1,884 AI policy initiatives recorded in the OECD AI Policy Observatory to map the strategic orientations and institutional characteristics of national AI governance across OECD member countries. The analysis focuses on five key dimensions: policy volume, thematic focus, operational priorities, ethical principle integration, and evaluation mechanisms. Results reveal that Luxembourg (132 policies), Germany (120), and France (108) lead in policy activity, reflecting higher levels of institutional engagement. Thematically, 924 initiatives are linked to national AI strategies, while operationally, skills development (434), AI in public services (421), and R&D funding (409) emerge as dominant areas. Ethical principles such as transparency (481), human-centered values (431), and accountability (404) are commonly referenced, yet 7.4% of policies include no ethical consideration. Moreover, only 23.7% of policies involve private sector funding, and just 9.3% incorporate formal evaluation mechanisms. These findings highlight significant governance gaps in stakeholder collaboration and policy accountability. The study contributes to the growing literature on comparative AI policy and calls for more adaptive, inclusive, and accountable frameworks to guide the future of AI governance globally

Keywords AI Governance, OECD Policy Analysis, National AI Strategies, Ethical AI, Policy Evaluation

Introduction

Artificial Intelligence (AI) is rapidly transforming the technological, economic, and political foundations of modern society [1]. No longer confined to experimental research or narrow automation tasks, AI now underpins a wide range of real-world applications, including automated diagnostics in healthcare, predictive maintenance in manufacturing, algorithmic decision-making in public administration, and personalized services in digital platforms [2]. This expansion of AI's capabilities and influence presents both unprecedented opportunities for innovation and substantial challenges for governance [3]. As AI systems become increasingly embedded in high-stakes domains, such as law enforcement, education, finance, and social services, the need for coherent, inclusive, and accountable governance frameworks has become urgent. Governments around the world have responded to these developments by crafting national AI strategies intended to harness the benefits of AI while mitigating its ethical, social, and economic risks [4]. These strategies typically involve a combination of policy instruments, including investment in research and development (R&D), regulatory guidance, digital infrastructure initiatives, workforce upskilling programs, and ethical governance principles. However, the formulation and implementation of such strategies vary considerably across

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jurisdictions, depending on national priorities, institutional capacity, and levels of technological maturity.

At the international level, the Organisation for Economic Co-operation and Development (OECD) has emerged as a central actor in promoting normative alignment and cross-border policy learning [5]. In 2019, the OECD introduced its AI Principles, the first intergovernmental standard on AI, endorsed by over 40 countries. These principles emphasize values such as transparency, robustness, fairness, accountability, and human-centered design. The subsequent launch of the OECD AI Policy Observatory has provided a publicly accessible database of national AI policies, enabling comparative research and fostering evidence-based policymaking. Despite this growing policy activity and institutional support, the academic literature has not kept pace with the rapid proliferation of AI governance initiatives. Existing research tends to focus either on the normative debates surrounding AI ethics or on qualitative case studies of individual national strategies. While valuable, such approaches often lack a comparative, data-driven perspective capable of revealing patterns, gaps, and inconsistencies across multiple countries. This limits the ability of scholars and policymakers to evaluate how well current governance models align with stated ethical commitments, how inclusive they are of diverse stakeholders, and whether they incorporate mechanisms for accountability and policy learning.

This study addresses this empirical and analytical gap by conducting a large-scale, cross-national analysis of 1,884 AI policy initiatives recorded in the OECD AI Policy Observatory. The aim is to systematically map the governance landscape of AI within OECD member countries across five dimensions: (1) the volume of AI-related policy initiatives, (2) the thematic focus of these initiatives, (3) their operational implementation areas, (4) the extent to which they incorporate ethical principles, and (5) the presence or absence of evaluation mechanisms. Through this framework, the study seeks to answer several key questions: Which countries are leading in AI policy development? What strategic priorities and policy areas are most commonly addressed? How consistently are ethical principles applied? And to what extent are policies subject to evaluation and accountability?

By providing a detailed and comparative view of national AI policy frameworks, this research contributes to the growing body of literature on AI governance, offering empirical insights that can inform future policymaking. The findings have implications not only for national governments and international organizations but also for industry actors, civil society, and academic institutions seeking to promote responsible and adaptive AI ecosystems.

Literature Review

The governance of AI has emerged as a prominent area of inquiry across policy, ethics, and technology studies, particularly as the societal impact of AI becomes more visible and far-reaching. As AI systems increasingly influence critical decision-making processes in domains such as healthcare, law enforcement, education, and finance, scholars and policymakers alike have emphasized the need for robust governance frameworks that balance innovation with ethical safeguards, social inclusion, and democratic accountability.

Early foundational work in the field of AI governance focused on normative principles for responsible AI development. Floridi et al introduced the AI4People framework, advocating for AI systems that are designed with respect for human

dignity, fairness, transparency, and accountability [6]. Similarly, Jobin et al conducted a global comparative analysis of 84 AI ethics guidelines and found a convergence around core values—such as privacy, fairness, and transparency—but also noted a lack of mechanisms for enforcement and operationalization [7]. Fjeld et al expanded on this critique, highlighting that while many frameworks agree on high-level ethical principles, they diverge significantly in terms of implementation, institutional responsibility, and oversight [8].

Other scholars have focused on the so-called "implementation gap," the disconnect between the aspirational nature of AI ethics and the practical challenges of policy enforcement. Mittelstadt argues that ethical AI principles often serve symbolic functions and fail to produce tangible accountability structures [9]. Thao et al further caution against “ethics washing,” where organizations or governments adopt ethical language in AI strategies without enacting substantive governance reforms [10]. These critiques suggest that effective AI governance must extend beyond principle-setting to include concrete instruments, performance indicators, and institutionalized review mechanisms.

Comparative analyses of national AI strategies have also gained momentum in recent years. Gill examined AI governance approaches in China, the European Union, and the United States, concluding that while strategic motivations differ—ranging from innovation leadership to ethical leadership—many policies lack clarity on accountability and evaluation frameworks [11]. Cave and ÓhÉigeartaigh similarly emphasize that while some nations prioritize economic competitiveness (e.g., the United States, South Korea), others focus more on equity and inclusion (e.g., Canada, Finland), yet all face challenges in aligning national policies with international standards [12]. Taddeo and Floridi draw attention to the fragmentation of AI governance across jurisdictions and advocate for the creation of common institutional benchmarks and global norms [13].

The role of multilateral frameworks has also been emphasized in recent literature. The OECD's AI Principles, adopted in 2019, represent the first intergovernmental standard for AI governance and have since been endorsed by over 40 countries [14]. These principles have laid the foundation for the OECD AI Policy Observatory, which compiles and standardizes policy initiatives from member states [15]. However, Veale and Zuiderveen Borgesius argue that legal and regulatory frameworks for AI remain largely reactive, fragmented, and siloed, calling instead for proactive, ex ante governance models that incorporate risk assessment and continuous monitoring [16].

Additionally, Whittlestone et al stress the importance of embedding governance mechanisms throughout the entire AI lifecycle from design and deployment to impact evaluation arguing that the absence of clear accountability structures undermines ethical intentions [17]. Koniakou (expands on this by tracing the shift from a normative “rush to ethics” toward a policy-driven “race for governance,” highlighting how governments are increasingly concerned with institutional legitimacy and global leadership in AI governance [18].

Despite these theoretical and normative advances, there remains a lack of empirical studies that leverage large-scale, standardized policy datasets to assess how countries are implementing AI governance frameworks in practice.

The OECD AI Policy Observatory provides a unique and underutilized resource for addressing this gap, offering structured information on over 1,800 AI initiatives classified across thematic, operational, and normative dimensions. While some OECD reports offer high-level summaries, academic literature has yet to fully exploit this dataset for systematic, comparative research.

This study aims to fill that void by conducting a cross-country, quantitative mapping of AI policy activity across OECD member states, with particular attention to ethical principle integration, funding structures, and policy evaluation mechanisms. By situating this analysis within the broader literature on AI ethics, implementation challenges, and governance convergence, the study contributes to a growing body of work that seeks to bridge the gap between normative aspirations and empirical realities. It builds on earlier critiques of ethics–governance disconnects while providing new, data-driven insights into how AI is being governed at the national level in practice.

Methods

This study employs a quantitative, descriptive, and exploratory research approach to examine patterns in national-level AI governance across OECD member countries. The dataset comprises 1,884 policy initiatives obtained from the OECD AI Policy Observatory. Each record represents a distinct AI-related public policy, such as a national strategy, funding program, regulation, or public service deployment, accompanied by metadata including country of origin, date, policy themes, operational areas, ethical principles referenced, funding source, and evaluation status.

Before analysis, the data underwent cleaning and transformation. Multi-label fields such as “Policy Area(s)” and “AI Principle(s)” were parsed into individual binary variables using text processing techniques, allowing each principle or area to be counted discretely. Inconsistent category labels were standardized, and missing values were handled using pairwise deletion. This process enabled valid aggregation across dimensions and ensured data consistency for comparative analysis.

The analysis focused on five key governance dimensions: (1) total policy volume per country, (2) thematic orientation of AI initiatives, (3) operational implementation areas, (4) ethical principles integration, and (5) funding and evaluation mechanisms. To quantify and interpret these dimensions, three core statistical measures were employed:

Frequency (f) [19]: Used to calculate how many times a category (e.g., a theme, principle, or policy area) appears in the dataset. Mathematically, the frequency of a category x is expressed as:

$$f_x = \sum_{i=1}^{n} I_x(i) \quad (1)$$

$I_x(i)$ = 1 if the category x is present in the observation i, and n, divided by the total number of observations.

Proportion (p): Used to determine the relative share of a characteristic across the total number of entries. The proportion of policies referencing a category x is given by:

$$P_x = \frac{f_x}{n} \quad (2)$$

f_x is the frequency of x, and n is the total number of valid policy entries.

Conditional Proportion [20]: Used to compare how often a policy feature x appears within a subset defined by another feature y. It is calculated as:

$$P_{x|y} = \frac{f_{x \cap y}}{f_y} \quad (3)$$

$f_{x \cap y}$ the joint frequency of categories x, y, and f_y is the total frequency of category y.

These statistical calculations allowed for the identification of trends, disparities, and potential gaps in how countries structure their AI governance frameworks. For example, by calculating the proportion of policies with ethical references or formal evaluations, the analysis highlights both normative convergence and implementation shortfalls.

To support interpretability, results were supplemented with visualizations including bar charts and proportional plots created using Python libraries such as pandas, matplotlib, and seaborn. These visuals enable rapid comparison across countries and categories, and offer an intuitive understanding of the policy landscape. The research process followed a structured sequence as shown in figure 1.

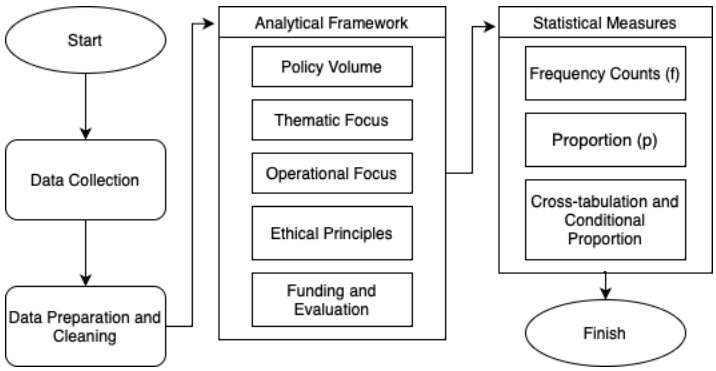

Figure 1 Research Step

This methodological approach is scalable, transparent, and well-suited to policy-oriented datasets. Although the study does not employ inferential statistical techniques, it offers a rigorous foundation for future hypothesis-driven research and international benchmarking of AI governance practices.

Result

This section presents the empirical findings derived from a systematic analysis of 1,884 AI policy initiatives documented across member countries of the Organisation for Economic Co-operation and Development (OECD). These initiatives represent a diverse array of government actions designed to regulate, support, and shape the development and implementation of AI technologies within national jurisdictions. The analysis is grounded in a structured framework that dissects the policy landscape into five primary dimensions: the volume of

AI policy activity by country, the thematic orientation of policies, their operational focus in terms of implementation areas, the extent to which they incorporate ethical principles, and the funding and evaluation mechanisms embedded in their design. Each of these dimensions is supported by both quantitative data in tabular form and visual illustrations, enabling a multidimensional perspective on the governance architecture surrounding AI in the OECD region.

The overall dataset reveals significant variation in the volume of AI-related policy initiatives among OECD countries. Although all member states have acknowledged the strategic importance of AI through some form of national policy response, the intensity and breadth of engagement differ markedly. Luxembourg emerges as the most active country, with 132 policy initiatives on record, closely followed by Germany with 120 and France with 108. The United States ranks fourth with 94 initiatives, while other technologically advanced nations such as Canada, the United Kingdom, Spain, Japan, and Italy report between 60 and 90 initiatives each. This uneven distribution of policy activity suggests that certain countries are exhibiting a more comprehensive and proactive stance toward AI governance, likely driven by a combination of political prioritization, economic competitiveness, and institutional capacity. The concentration of policy initiatives in countries like Luxembourg, Germany, and France reflects a high level of strategic alignment and resource mobilization across government institutions. These countries often possess well-developed digital infrastructures, long-standing research ecosystems, and cross-sectoral policy coordination mechanisms that enable more agile and inclusive governance. Moreover, their elevated policy volumes suggest a broader scope of AI integration extending beyond research and innovation to include areas such as education, labor, public administration, and ethical oversight. In contrast, countries with fewer initiatives may still be in the early stages of AI policy formation, or they may face structural limitations such as budget constraints, fragmented institutional mandates, or limited expertise in emerging technologies.

These initial findings set the stage for a deeper examination of how countries are translating policy volume into substantive action. The sections that follow explore in detail the thematic areas most frequently addressed in national AI policies, the operational domains targeted for implementation, the ethical principles that guide policy design, and the mechanisms—both financial and procedural that support or hinder long-term policy effectiveness. By unpacking each of these dimensions, the analysis not only maps the governance landscape of AI in OECD countries but also identifies key strengths, disparities, and blind spots that may influence the future trajectory of global AI governance.

Table 1 Number of AI Policies by Country

Country	Number of Policies
Luxembourg	132
Germany	120
France	108
United States	94

Canada	91
United Kingdom	82
Spain	76
Japan	69
Italy	67
Sweden	59

While table 1 offers a clear numerical breakdown of AI policy initiatives across the top 10 OECD member countries, this format, although precise, may not fully convey the relative differences and comparative scale of national policy engagement. To complement the tabular data, figure 2 provides a visual representation that accentuates disparities in AI policy intensity across countries. Through this bar chart, the leading position of Luxembourg becomes particularly evident, with its 132 initiatives standing out even among other highly active countries. Germany and France follow closely behind, further underscoring a strong national commitment to AI governance within these states. The steep drop in policy counts beyond the top three nations suggests a tiered structure of engagement, where a handful of countries are driving the bulk of AI policy development within the OECD. This visual cue reinforces the interpretation that technological readiness, digital infrastructure maturity, and institutional coordination play a central role in enabling sustained and large-scale AI policy formulation. Moreover, the chart aids in communicating the policy gap between early movers and those still building foundational frameworks, making it a valuable tool for interpreting the uneven landscape of AI governance across the OECD region.

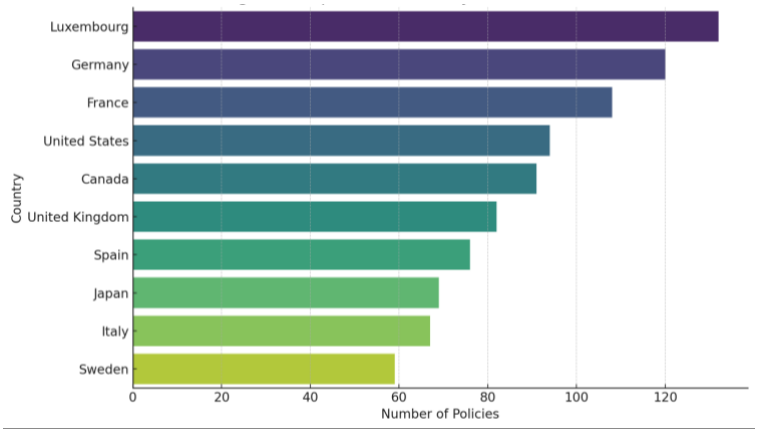

Figure 2 Top 10 Countries by Number of AI Policies

Figure 2 visualizes the volume of AI policy initiatives across leading OECD countries, offering a comparative perspective on national engagement levels. The figure highlights not only the absolute counts of initiatives but also the relative dominance of countries such as Luxembourg, Germany, and France, whose strategic commitment to AI is reflected in the breadth and depth of their policy portfolios. This visualization complements the numerical data in table 1 by illustrating the clear concentration of AI policy activity within a subset of highly digitalized and institutionally capable nations.

Beyond the distribution of policies by country, the analysis also reveals a

consistent pattern in thematic orientation. National AI strategies emerge as the most frequently addressed policy theme, accounting for 924 of the 1,884 entries in the dataset. This finding indicates a strong tendency among OECD countries to treat AI not as an isolated technological advancement, but as a central pillar of broader developmental and governance agendas. Following national strategy frameworks, the next most prominent themes include digital economy (286), science and innovation (232), and education and skills (172), further emphasizing the multisectoral impact of AI. Collectively, these results suggest that OECD governments are increasingly embedding AI within long-term socio-economic transformation plans, where AI is seen as both a driver of innovation and a subject of regulatory and ethical scrutiny.

Table 2 Frequency of Policy Themes

Theme	Frequency
National AI Policies	924
Digital Economy	286
Science, Technology and Innovation	232
Education and Skills	172
Employment and Labour	87

Table 2 presents the raw frequency of thematic orientations in national AI policy initiatives, revealing clear priorities among OECD member countries. The most dominant theme is National AI Policies, appearing in 924 of the total 1,884 entries, followed by the Digital Economy (286), Science, Technology and Innovation (232), and Education and Skills (172). In contrast, Employment and Labour appear far less frequently, cited in only 87 initiatives. This distribution suggests that while governments acknowledge the broader socio-economic implications of AI, most policy attention remains concentrated on strategic planning, innovation ecosystems, and digital transformation.

To complement the tabular data, figure 3 offers a visual interpretation that underscores the overwhelming dominance of national AI strategies and exposes the relative underrepresentation of labor and education-related themes. The disparity illustrated in the chart highlights a potential misalignment between the pace of AI development and the preparation of labor markets and educational systems to adapt accordingly. As AI continues to reshape job structures and workforce dynamics, the limited emphasis on employment and skills development in AI policy frameworks may signal a need for more balanced and inclusive governance approaches that proactively address socio-economic transitions alongside technological advancement.

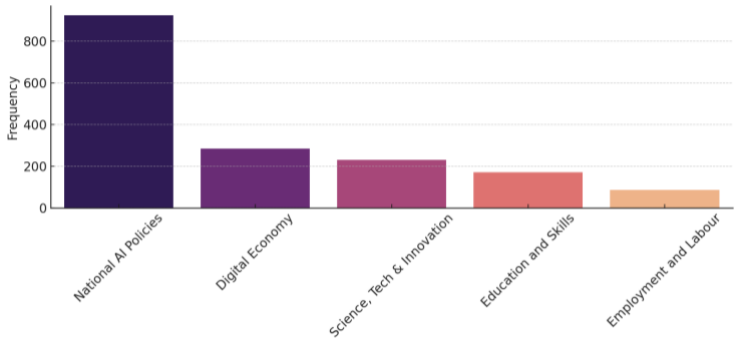

Figure 3 Frequency of AI Policy Themes

Figure 3 highlights the strategic themes addressed most frequently in national AI policies, offering a visual summary of the thematic priorities across OECD member states. The prominence of "National AI Policies" as the leading theme reflects a widespread recognition that AI is not merely a technological innovation but a strategic domain requiring coordinated, long-term policy attention. Themes such as the digital economy, science and innovation, and education and skills also appear prominently, though at significantly lower frequencies. The figure clearly illustrates that while governments are actively embedding AI into their national agendas, certain societal aspects, such as employment and labor, receive comparatively limited attention.

Building on this thematic analysis, the operational dimension of AI governance reveals how these strategies are translated into practice. Table 3 shows that the most frequently targeted policy areas include skills development (434 initiatives), AI applications in public services (421), and research and development funding (409). These operational foci reflect a dual strategic orientation: on one hand, enhancing human capital to ensure that the workforce is adequately prepared for an AI-driven economy; and on the other, leveraging AI to modernize public institutions and accelerate scientific progress. The convergence of policy efforts in these areas suggests that OECD countries are aiming to align technological advancement with both societal readiness and institutional transformation.

Table 3 Frequency of AI Policy Areas

Policy Area	Frequency
Skills Development	434
AI in Public Services	421
R&D Funding	409
Data Infrastructure	314
Public-Private Partnerships	247

As shown in table 3, the most frequently targeted operational areas in national AI policies namely skills development, public sector AI implementation, and research and development funding demonstrate clear and recurring priorities across OECD countries. These areas reflect an emphasis on equipping societies with the capabilities needed to thrive in an AI-driven future, while simultaneously modernizing state institutions through technology. The high frequency of policies focused on human capital formation underscores the recognition that sustainable AI integration requires not only technological innovation but also a well-prepared workforce.

To complement the numerical summary, figure 4 provides a comparative visualization that further accentuates the focus on human capital development and public sector adoption of AI technologies. The bar chart depicts the relative prominence of these operational domains, making it easier to observe how countries are allocating policy resources and attention. This visual representation reinforces the interpretation that OECD member states are increasingly aligning their AI strategies with both innovation-driven growth and inclusive institutional transformation, though some areas, such as public–private

partnerships, remain comparatively less emphasized.

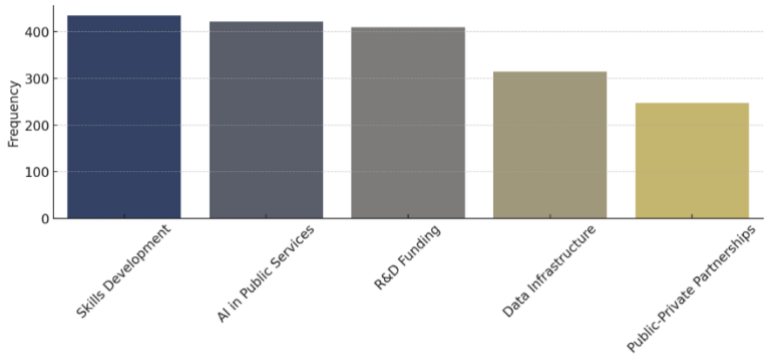

Figure 4 Frequency of AI Policy Areas

Figure 4 illustrates the primary implementation domains targeted by AI governance initiatives, providing a clear visual comparison of the areas most frequently prioritized by policymakers. The figure reinforces the dominance of skills development, public sector AI adoption, and research and development funding, underscoring a policy orientation that balances human capacity building with technological advancement in institutional settings. This visual representation supports the interpretation that most OECD countries are operationalizing their AI strategies through investments in human capital and public infrastructure, while placing comparatively less emphasis on mechanisms such as public–private partnerships or data infrastructure.

Moving beyond operational focus, the analysis also examines the extent to which ethical considerations are embedded within national AI policy frameworks. The integration of ethical principles varies considerably across countries. Transparency emerges as the most frequently referenced principle, appearing in 481 initiatives, followed by human-centered values (431), accountability (404), robustness and safety (376), and fairness and non-bias (365). While the prevalence of these principles signals growing normative awareness, the fact that 7.4% of policies contain no explicit ethical reference suggests an uneven institutionalization of responsible AI practices. This inconsistency may reflect differences in regulatory maturity, political priorities, or the perceived urgency of ethical oversight in national contexts, raising concerns about the enforceability and universality of ethical AI standards across the OECD.

Table 4 Frequency of AI Principles Referenced

Ethical Principle	Frequency
Transparency	481
Human-centered Values	431
Accountability	404
Robustness and Safety	376
Fairness and Non-bias	365

Table 4 presents these ethical principles in quantitative form, offering a clear overview of how frequently each value is referenced across the 1,884 AI policy initiatives analyzed. The numerical data reinforces the observation that

transparency, human-centered values, and accountability are the most prominently cited principles, aligning with the core recommendations outlined in the OECD AI Principles. However, the relatively lower frequencies for robustness, safety, and fairness, alongside the complete absence of ethical references in a subset of policies, indicate significant disparities in how ethical governance is operationalized across member states.

To further enhance interpretability, figure 4 provides a visual profile of ethical orientation across national policies. The chart enables quick comparison among the five most common principles and highlights the degree of convergence among OECD countries on key ethical standards. At the same time, the figure exposes persistent gaps in policy adoption and implementation, particularly in the consistent embedding of ethical safeguards across sectors. This suggests that while ethical awareness is growing at the policy level, its translation into enforceable governance mechanisms remains uneven posing challenges for accountability, public trust, and cross-border policy alignment in the realm of AI governance.

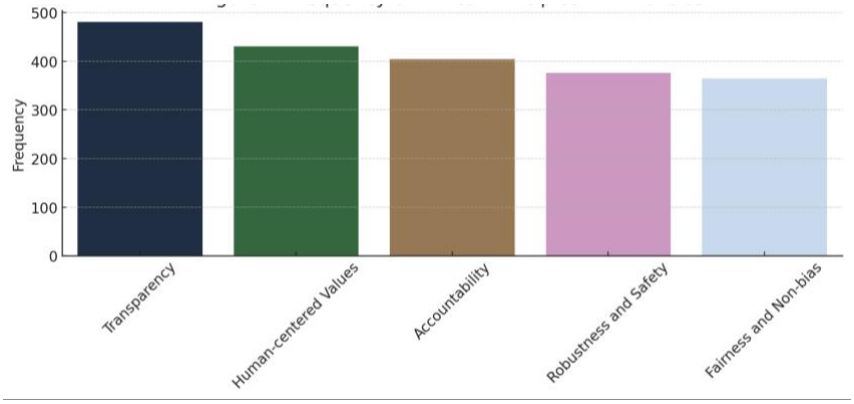

Figure 5 Frequency of Ethical Principles in AI Policies

Figure 5 presents the ethical foundations most commonly referenced in national AI strategies, offering a visual synthesis of the normative values guiding AI governance across OECD countries. The figure not only affirms convergence on core principles such as transparency and human-centeredness but also brings into sharper relief the inconsistencies in how ethical considerations are prioritized and integrated. While the visual distribution suggests that ethical awareness is widely acknowledged in principle, the variation in frequency across different values, combined with the absence of ethical references in a significant subset of policies, highlights a lack of uniformity in institutionalizing responsible AI.

Turning from ethical orientation to policy implementation structures, the analysis reveals another critical governance gap: the limited involvement of private sector actors in AI policy funding. As shown in table 5, only 23.7% of the policy initiatives report any form of private financial contribution, indicating that AI governance remains predominantly centralized under public institutions. While public-sector leadership is essential for safeguarding public interest and ensuring equitable access to AI benefits, the minimal role of private entities may constrain innovation, reduce scalability, and limit opportunities for collaborative policy experimentation. Moreover, the lack of structured public–private partnerships could inhibit the alignment between regulatory frameworks and

real-world technological deployment, potentially slowing the integration of AI into high-impact sectors such as industry, health, and finance.

Table 5 Proportion of Policies with Private Sector Funding

Private Sector Involvement	Proportion
False	0.763
True	0.237

In terms of accountability, only 9.3% of the AI policy initiatives include any form of evaluation mechanism, as indicated in table 6. This strikingly low proportion points to a substantial gap in the policy cycle, where formulation and implementation are not matched by adequate structures for monitoring, feedback, or iterative improvement. The lack of formal review processes suggests that feedback loops, impact assessments, and performance metrics remain underdeveloped or absent in most national contexts. Without institutionalized evaluation systems, policymakers may be unable to assess whether strategic goals are being achieved, detect unintended consequences, or adapt interventions in response to shifting technological and societal dynamics.

Moreover, the absence of evaluation frameworks raises concerns about long-term policy sustainability and public accountability. In the context of a rapidly evolving and ethically sensitive domain like artificial intelligence, the failure to embed mechanisms for continuous learning and adjustment undermines the credibility and responsiveness of governance architectures. It also limits opportunities for cross-country benchmarking, best-practice transfer, and evidence-based refinement of national strategies. As AI technologies continue to expand in scale and impact, establishing robust policy evaluation protocols will be critical for ensuring that governance efforts remain aligned with societal values, technical realities, and evolving public expectations.

Table 6 Proportion of Policies That Have Been Evaluated

Evaluation Mechanism	Proportion
False	0.906
True	0.093

Taken together, these findings reveal two particularly significant gaps in the current landscape of AI governance across OECD member states: the limited engagement of the private sector in policy development and funding, and the near absence of systematic evaluation mechanisms. Despite the proliferation of national AI strategies and the growing emphasis on ethical principles and human capital development, the governance frameworks remain largely state-driven and insufficiently equipped for adaptive learning. The lack of structured public–private collaboration may restrict innovation capacity, hinder the alignment between regulation and real-world technological deployment, and slow the diffusion of AI benefits across key economic sectors. Simultaneously, the minimal integration of evaluation tools such as feedback loops, performance indicators, and policy review systems undermines the ability of governments to

monitor effectiveness, respond to unintended consequences, or iterate policies over time.

Addressing these limitations will be essential for strengthening the long-term credibility, responsiveness, and inclusivity of AI governance. Building robust mechanisms for stakeholder collaboration, including transparent roles for private sector actors, and institutionalizing evaluation as a core component of the policy lifecycle can enhance both policy legitimacy and strategic agility. As OECD countries continue to expand their AI policy portfolios, these two structural challenges must be prioritized to ensure that AI governance evolves in step with the complexity, speed, and societal impact of technological change.

Discussion

The results of this study provide a comprehensive overview of how OECD member countries are approaching the governance of artificial intelligence through national policy frameworks. A key observation from the analysis is the considerable disparity in the volume and scope of AI policy initiatives across countries. Nations such as Luxembourg, Germany, and France emerge as leaders in policy activity, indicating higher institutional readiness, stronger political prioritization, and greater integration of AI within national development agendas. This variation suggests that while AI governance is globally acknowledged as a policy imperative, its realization remains uneven and highly dependent on country-specific capacities, including economic resources, digital infrastructure, and administrative coordination. At the thematic level, the dominance of “National AI Strategies” underscores a widespread governmental recognition of AI as a transformative force that must be addressed at the highest levels of strategic planning. However, the relatively limited attention to themes such as employment and labor, despite AI’s profound implications for the future of work, raises concerns about the comprehensiveness of current policy approaches. Similarly, while education and skills development are prominently featured in operational domains, the thematic underrepresentation of these areas in high-level strategy documents suggests a potential disconnect between long-term planning and immediate capacity-building needs.

The findings also reveal a shared operational focus across OECD countries, with a concentration of policies aimed at human capital development, AI deployment in public services, and research and development funding. These areas indicate a dual policy orientation: one that seeks to enable innovation and maintain competitiveness, and another that leverages AI to improve governance and public service delivery. While such investments are foundational to building a sustainable AI ecosystem, the relatively lower emphasis on public–private partnerships and data infrastructure points to missed opportunities for collaboration and system-wide integration. Perhaps most notably, the integration of ethical principles into national AI strategies is both widespread and inconsistent. While transparency, human-centered values, and accountability are frequently referenced, the absence of ethical considerations in 7.4% of policies suggests a lack of institutional mechanisms to ensure that ethical principles are translated into enforceable standards. This ethical implementation gap is especially concerning given the growing reliance on AI systems in sensitive domains such as health, finance, and criminal justice.

Equally troubling is the near absence of evaluation mechanisms. With only 9.3% of policies incorporating formal review processes, AI governance in the OECD

appears to lack the feedback structures necessary for adaptive and evidence-based policymaking. The absence of impact assessments, performance monitoring, and policy iteration tools may result in stagnation, inefficiency, and reduced public trust in government-led AI initiatives. In a rapidly evolving technological landscape, the ability to learn from implementation outcomes and course-correct in real time is essential to responsible governance.

Overall, these findings point to a dual reality in OECD-level AI governance: while the strategic ambition and policy activity are substantial, the institutionalization of accountability, inclusiveness, and adaptability remains underdeveloped. Bridging this gap will require not only policy innovation but also structural reform, integrating multi-stakeholder collaboration, ensuring rigorous ethical oversight, and embedding robust evaluation mechanisms into the very architecture of AI governance.

Conclusion

This study has provided a data-driven analysis of artificial intelligence governance across OECD member countries, drawing on a comprehensive dataset of 1,884 policy initiatives documented in the OECD AI Policy Observatory. By examining five key dimensions—policy volume, thematic orientation, operational focus, ethical principle integration, and implementation mechanisms—this research offers a comparative perspective on how AI is being positioned within national policy architectures. The findings indicate that while AI is increasingly treated as a national priority, reflected in the widespread adoption of national strategies and public-sector initiatives, the depth and breadth of policy implementation remain uneven. Countries such as Luxembourg, Germany, and France demonstrate high levels of engagement, likely enabled by stronger digital infrastructure and institutional coordination. However, other member states show significantly lower levels of policy activity, suggesting disparities in readiness and resource allocation.

Thematic analysis reveals that AI is predominantly framed within strategic, innovation-driven agendas, yet less attention is given to themes related to labor market adaptation, education systems, and long-term social equity. Operationally, there is clear investment in capacity building and public-sector modernization, especially in the areas of skills development, public service applications, and R&D funding. Nevertheless, critical elements such as public–private partnerships and data infrastructure remain underrepresented. Ethical principles, especially transparency, accountability, and human-centered values, are present in the majority of policies, but are inconsistently applied. The fact that 7.4% of policies contain no ethical reference at all points to a gap between normative commitments and their translation into binding regulatory frameworks. Even more concerning is the lack of formal evaluation structures; only 9.3% of AI policies include any mechanism for monitoring, assessment, or policy revision.

These gaps highlight two overarching weaknesses in current AI governance across the OECD: the absence of institutionalized public-private collaboration and the lack of systematic policy evaluation. Addressing these limitations is essential not only for ensuring the accountability and adaptability of AI systems but also for fostering public trust and international alignment. Future policy development must therefore prioritize multi-stakeholder engagement, embed robust ethical safeguards, and institutionalize feedback mechanisms as core

elements of AI governance.

In conclusion, while OECD countries have made commendable progress in recognizing the strategic significance of AI and initiating relevant policies, substantial work remains to be done. The challenge moving forward lies in moving beyond high-level declarations and toward governance frameworks that are inclusive, enforceable, transparent, and resilient in the face of rapid technological change.

Declarations

Author Contributions

Conceptualization: H.A.A.A. and H.H.A.; Methodology: H.H.A.; Software: H.A.A.A.; Validation: H.A.A.A. and H.H.A.; Formal Analysis: H.A.A.A. and H.H.A.; Investigation: H.A.A.A.; Resources: H.H.A.; Data Curation: H.H.A.; Writing Original Draft Preparation: H.A.A.A. and H.H.A.; Writing Review and Editing: H.H.A. and H.A.A.A.; Visualization: H.A.A.A.; All authors have read and agreed to the published version of the manuscript.

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Declaration of Competing Interest

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