



Research Management in EU Research Policy and Its Implications for Higher Education Institutions in Türkiye

Rabia Taş

Anadolu University, Türkiye

Abstract

Effective research management has become a critical determinant of institutional performance, international competitiveness, and research quality in higher education. As higher education institutions increasingly engage with global research frameworks, the European Union (EU) has emerged as a leading actor in shaping research governance through the European Research Area (ERA) and flagship programmes such as Horizon Europe. Despite the growing significance of research management within EU policy frameworks, its institutional translation -particularly for candidate countries- remains underexplored in the academic literature. This study aims to examine the place of research management within EU research policy, analyse its reflections on higher education institutions through the ERA framework, and assess Türkiye's current alignment with EU research management norms through the Turkish Research Area (TARAL) strategy. Drawing on qualitative document analysis as the primary research method, the study systematically reviews EU policy documents, ERA strategic plans, and TARAL policy frameworks to identify core research management principles and their institutional applicability. The study is expected to contribute to the research policy literature by revealing the gap between EU-level research management norms and their institutional reflection in Turkish higher education, and by offering a comparative framework for universities in EU candidate countries navigating alignment processes.

Keywords: European Research Area; higher education policy; research management; European Union; Türkiye-EU alignment

1. Introduction

Research management is of critical importance in ensuring that research activities are conducted effectively, efficiently, and ethically. Particularly within higher education institutions and research organizations, the sound management of this domain enhances the quality and societal impact of research outputs, strengthens international collaborations, and ensures financial sustainability. The European Union (EU) possesses significant

achievements and exemplary practices in the fields of research management and research administration within higher education. The EU has developed comprehensive policies that emphasize the role of research and innovation in societal and economic development. In particular, the European Research Area (ERA), framework programmes such as Horizon Europe, and various education and research collaboration projects constitute the primary initiatives that position the EU as a leader in this domain. These programmes offer important models for strengthening research and research management in higher education across Europe.

This study examines the place of research management within EU research policies and its significance for higher education institutions. The analysis is structured around the ERA framework as the primary reference point for evaluation. Türkiye, as a candidate country for EU membership, is pursuing the goal of developing policies aligned with the ERA, and has accordingly advanced the Turkish Research Area (TARAL). This project aims to investigate the significance of research management within the ERA framework and its current areas of application, with a view to identifying the core principles that may be transferred to TARAL through the mechanism of policy diffusion.

1.1 Literature Review

Research management holds critical importance with respect to the core policies and quality management processes of higher education institutions. Within the scope of the ERA, the EU offers research policies to higher education institutions and supports developments in this field through various instruments such as policy documents, standards, and accreditation processes. It publishes grant support programmes, multi-annual objectives, and priority areas pertaining to research management. Nevertheless, the number of sources in the literature addressing whether direct guidelines, policy recommendations, and/or good practice manuals exist for higher education institutions specifically on the subject of research management remains limited. When a literature review is conducted using the search term "EU research management," it is possible to access studies focusing on EU research policies. However, these studies are predominantly oriented toward the economic development impacts of research and/or the adoption, implementation, and integration of EU policies by member states. Banchoff (2002) examined the influence of EU research policies on member states' national policy frameworks, focusing on policy coordination and institutional adaptation rather than research management as such. Pavitt (2000) argued for stronger EU support for academic research, emphasizing funding mechanisms over institutional research management considerations. In their study entitled *Fostering University-Industry R&D Collaborations in European Union Countries*, Cunningham and Link (2015) explored university-industry R&D collaboration within the EU from a commercialization perspective, without addressing research management policy implications for higher education institutions. Dzemyda and Melnikas (2009) examined the effects of EU innovation, research, and development policies on regional economies. Primeri and Reale (2012) explored Europe's potential to shape academic research, investigating the nature of the contributions that receiving research support through EU framework programmes makes to the competitiveness of institutions in the domains of research and innovation.

From this perspective, it is evident that the literature contains no study -or at most only indirect discussion- that approaches EU research management from the standpoint of its core principles and develops a proposed research management model for higher education institutions. İktisadi Kalkınma Vakfı (n.d.) has produced a study entitled *Avrupa Birliği'nin Bilim ve Teknoloji Politikası* [The Science and Technology Policy of the European Union]. This study traces the historical formation of EU research policy and provides an informative

account of Türkiye's current position in response to the question of how Türkiye's Science and Technology policy aligns with that of the EU. However, no discussion of research management specific to higher education institutions is undertaken. When a literature review is conducted using the search terms "European Union research management" [Avrupa Birliği araştırma yönetimi], the doctoral dissertation by İnandı (2005) addresses the subject of educational administration within the education systems of EU countries and the Turkish education system, with a particular focus on the sub-field of education financing. Within the scope of their academic conference paper, Gürdal and Bitri (2015) examined the topic of Research Data Management, Open Data, and European Union Scientific Data Infrastructure: OpenAIRE2020, focusing on research data management rather than on research management as such. Beyond EU policy documentation, the broader research management professionalism literature offers important context for situating the findings of this study. The field of research management has increasingly been recognised as a distinct profession requiring specialised competencies, institutional frameworks, and career pathways. Derrick and Nickson (2014) examined the evolving role of research managers and administrators, identifying a tension between administrative and strategic functions that mirrors the gaps identified in this study between Türkiye's policy commitments and institutional practice. At the European level, the European Association of Research Managers and Administrators (EARMA), founded in 1995 and operating as the recognised representative body for the research management profession across the ERA, has consistently positioned the professionalisation of research management as a structural prerequisite for effective ERA implementation (EARMA, n.d.). Through a portfolio of Horizon 2020 and Horizon Europe-supported projects, EARMA's work demonstrates that the gap between ERA policy ambition and institutional practice is a recognised challenge at the European level, not unique to candidate countries such as Türkiye (EARMA, n.d.). Regarding research evaluation reform, the San Francisco Declaration on Research Assessment (DORA, 2012) and the The Leiden Manifesto for research metrics (Hicks et al., 2015) established foundational critiques of impact-factor-based evaluation providing the scholarly grounding for the assessment reform dimension identified in this study's ERA norm mapping. Accordingly, it is assessed that a gap exists in the literature with respect to EU research management practices and their adaptation to higher education institutions; this study aims to contribute to filling that gap.

2. Methods

This study investigates the elements and principles pertaining to research management within EU research policy. Its specific focus is the identification of topics and domains that can be directly associated with higher education institutions. In this context, ERA policy documents and official papers, strategic plans, other relevant official documents and instruments have been examined. As a result of this review, the core principles of ERA research management have been identified, and a general comparative analysis has been conducted between these principles and the TARAL infrastructure established by Türkiye -a candidate country for EU membership- in the course of its process of alignment with the ERA. Following an examination of the current state of research management in Türkiye and its comparison with that of the EU, the study aims to derive a higher education research management framework that is compatible with EU research management principles.

This study employs qualitative document analysis as its primary research method. The analytical process unfolded in three sequential stages. In the first stage, a corpus of official EU policy documents published between 2020 and 2025 was identified and systematically reviewed. Selection criteria prioritised documents with direct relevance to research governance, higher education, and ERA implementation, resulting in a final corpus of eleven

primary documents. Document selection followed explicit inclusion and exclusion criteria to ensure methodological transparency. Regarding temporal boundaries, the period 2020–2025 was delimited on the basis that it corresponds to the launch of the renewed ERA framework initiated by the European Commission's 2020 Communication, which marked a substantive restructuring of EU research governance priorities and introduced the ERA Policy Agenda as a new implementation instrument. Documents published prior to 2020 were excluded as they reflect a preceding ERA governance cycle whose institutional logic and priority architecture differ meaningfully from the current framework under analysis. Regarding document type, inclusion was restricted to primary policy documents issued by EU institutional actors — specifically the European Commission, the Council of the European Union, and formally mandated bodies such as ESFRI and EOSC — in their official capacity to set, recommend, or operationalize ERA policy. This category encompasses formal communications, council conclusions, council recommendations, strategic plans, and roadmaps, all of which carry direct normative weight within the ERA governance architecture. Excluded from the corpus were secondary and interpretive materials such as working papers, impact assessments, staff working documents, and academic commentaries on EU policy, as these do not themselves constitute policy instruments. Documents addressing ERA-adjacent domains — such as cohesion policy, structural funds, or digital single market policy — were similarly excluded unless they contained explicit provisions directly governing research management or higher education research governance. The eleven documents retained for analysis were those that, taken together, provide comprehensive coverage of ERA policy priorities across the full 2020–2025 cycle while representing each major institutional actor and instrument type within the ERA governance structure. This purposive sampling approach is consistent with the logic of policy document analysis as described in qualitative research methodology literature, wherein the goal is theoretical completeness rather than statistical representativeness (Bowen, 2009, pp.27-32). In the second stage, each document was subjected to thematic content analysis, wherein recurring references to research management principles, governance expectations, and higher education responsibilities were identified, coded, and grouped into thematic clusters. This inductive coding process yielded thirteen categories and thirty-nine associated norms, which together constitute the ERA research management framework developed in this study. In the third stage, the resulting framework was used as an analytical lens through which Türkiye's national research governance instruments -including BTYK decisions, TÜBİTAK policy documents, and YÖK strategic plans- were examined and compared. This comparative stage was similarly document-based, drawing on official national policy texts to assess the degree of convergence with each identified ERA norm. The overall design is interpretive in orientation, aiming not to produce a quantitative alignment score but to offer a structured and evidence-grounded reading of where Türkiye's research management trajectory stands in relation to ERA expectations.

Recognizing the importance that the EU attaches to research management -given its substantial investments in the research domain through programmes such as Horizon Europe and its role in defining the core principles governing research collaborations both among member states and with third countries- is of considerable significance for Türkiye as an EU candidate country, both in terms of taking these principles into account and adapting them to the field of higher education. Accordingly, the fundamental scope of this study encompasses obtaining data on the place of research management within EU research policies and its reflection upon higher education institutions.

3. Results

The analysis draws on eleven key EU policy documents shaping the ERA, spanning the period 2020–2025. These include: *A New ERA for Research and Innovation* (European Commission, 2020), *Council Conclusions on the New European Research Area* (Council of the European Union, 2020), *A Pact for Research and Innovation in Europe* (Council of the European Union, 2021a), *Council Conclusions on the Future Governance of the ERA* (Council of the European Union, 2021b), *European Research Area policy agenda 2022–2024* (European Commission, 2021), *Horizon Europe Strategic Plan 2021–2024* (European Commission, 2021), *ESFRI Roadmap 2021* (European Strategy Forum on Research Infrastructures, 2021), *European Strategy for Universities* (European Commission, 2022), *Horizon Europe Strategic Plan 2025–2027* (European Commission, 2024), *European Research Area Policy Agenda 2025–2027* (Council of the European Union, 2025), and the *EOSC Strategic Research and Innovation Agenda (SRIA)* (European Open Science Cloud, 2021). These documents were analysed using a consistent analytical framework focusing on research management-related dimensions such as governance, funding, open science, research careers, infrastructures, and knowledge valorisation. The findings were mapped whereby recurring themes and policy priorities were systematically aligned with the categories developed in this study. As presented in Table 1, this mapping reveals the multi-dimensional and evolving nature of research management within EU research policy, highlighting its transformation into a comprehensive governance and implementation framework with references to higher education dimensions.

Table 1: Mapping of EU Policy Documents to Research Management and Higher Education Dimensions

Document and Source	Year	Main Policy Focus	Research Management Dimensions	Higher Education Dimensions
Communication from the Commission: A New ERA for Research and Innovation (COM(2020) 628 final) Source: <i>A New ERA for Research and Innovation</i> (European Commission, 2020)	2020	Establishing a renewed ERA framework focusing on integration, excellence, and systemic transformation of research and innovation	Strategic governance and coordination; Investment targets and funding coordination; Excellence principle; Joint programming; Research infrastructures; Monitoring systems; Open science; Knowledge valorisation; Research careers; Gender equality	Strategic Planning and Priority Setting; Governance and Coordination; Funding and Investment; Excellence and Quality; Collaboration and Networking; Infrastructure and Services; Open Science and FAIR Principles; Innovation and Valorisation; Talent and Careers; Diversity, Inclusion and Equality
Council Conclusions on the New European Research Area (13567/20)	2020	Framework of the New ERA with value-based and excellence-driven system	Ethics and integrity; Multi-level governance; Open science; Research careers; Knowledge	Excellence and Quality; Governance and Coordination; Funding and Investment; Open

Source: <i>Council Conclusions on the New European Research Area (Council of the European Union, 2020)</i>			circulation; Infrastructure management; Monitoring systems	Science and FAIR Principles; Talent and Careers; Innovation and Valorisation; Infrastructure and Services; Skills and Education; Diversity, Inclusion and Equality; Strategic Planning and Priority Setting; Collaboration and Networking
Council Recommendation on a Pact for Research and Innovation in Europe (2021/2122) Source: <i>A Pact for Research and Innovation in Europe (Council of the European Union, 2021a)</i>	2021	Alignment of national R&I systems with ERA values	Research assessment reform; Funding alignment; Open science culture; Infrastructure access; Knowledge valorisation; Monitoring systems; Inclusiveness; International cooperation	Excellence and Quality; Governance and Coordination; Funding and Investment; Open Science and FAIR Principles; Infrastructure and Services; Innovation and Valorisation; Strategic Planning and Priority Setting; Diversity, Inclusion and Equality; Collaboration and Networking; Societal Engagement
Council Conclusions on the Future Governance of the ERA (14308/21) Source: <i>Council Conclusions on the Future Governance of the ERA (Council of the European Union, 2021b)</i>	2021	Governance and implementation reform of ERA	ERA policy agenda; Strategic foresight; Monitoring systems; Open science; Careers; Infrastructure sustainability; Knowledge valorisation	Governance and Coordination; Strategic Planning and Priority Setting; Open Science and FAIR Principles; Excellence and Quality; Talent and Careers; Diversity, Inclusion and Equality; Innovation and Valorisation; Infrastructure and Services; Collaboration and Networking; Skills and Education

ERA Policy Agenda 2022–2024 Source: <i>European Research Area policy agenda 2022–2024 (European Commission, 2021)</i>	2021	Operationalisation of ERA priorities	Open science; Research careers; Gender equality; Knowledge valorisation; Infrastructure access; Innovation ecosystems; Monitoring; Stakeholder co-creation	Open Science and FAIR Principles; Excellence and Quality; Talent and Careers; Diversity, Inclusion and Equality; Innovation and Valorisation; Infrastructure and Services; Collaboration and Networking; Strategic Planning and Priority Setting; Governance and Coordination; Societal Engagement; Sustainability
Horizon Europe Strategic Plan 2021–2024 Source: <i>Horizon Europe Strategic Plan 2021–2024 (European Commission, 2021)</i>	2021	Strategic orientations and impact logic for EU R&I funding	Co-design; Impact pathways; Missions; Partnerships; Open science; Dissemination; Monitoring	Strategic Planning and Priority Setting; Governance and Coordination; Funding and Investment; Open Science and FAIR Principles; Innovation and Valorisation; Collaboration and Networking; Excellence and Quality; Societal Engagement; Sustainability
ESFRI Roadmap 2021 Source: <i>ESFRI Roadmap 2021 (European Strategy Forum on Research Infrastructures, 2021)</i>	2021	European research infrastructure ecosystem	Infrastructure lifecycle; Portfolio governance; Funding synergies; Key Performance Indicators (KPI) monitoring; FAIR data; Industry collaboration; Impact assessment	Infrastructure and Services; Governance and Coordination; Funding and Investment; Open Science and FAIR Principles; Innovation and Valorisation; Collaboration and Networking; Excellence and Quality; Societal Engagement; Sustainability
European Strategy for Universities	2022	Integration of universities into ERA	Education–research integration;	Governance and Coordination; Strategic Planning

(COM(2022) 16 final) Source: <i>European Strategy for Universities (European Commission, 2022)</i>			Alliances; Careers; Digital infrastructure; Technology transfer; Monitoring	and Priority Setting; Talent and Careers; Skills and Education; Innovation and Valorisation; Infrastructure and Services; Collaboration and Networking; Diversity, Inclusion and Equality; Societal Engagement
Horizon Europe Strategic Plan 2025–2027 Source: <i>Horizon Europe Strategic Plan 2025–2027 (European Commission, 2024)</i>	2024	Strategic update including sustainability and security	Strategic autonomy; Research security; Open science; Missions scaling; Science-policy; Sustainability	Strategic Planning and Priority Setting; Governance and Coordination; Open Science and FAIR Principles; Innovation and Valorisation; Collaboration and Networking; Excellence and Quality; Societal Engagement; Sustainability
Council Recommendation on the ERA Policy Agenda 2025–2027 Source: <i>European Research Area Policy Agenda 2025–2027 (Council of the European Union, 2025)</i>	2025	Future governance and policy priorities	AI governance; Research security; Science-policy interface; Monitoring systems	Governance and Coordination; Strategic Planning and Priority Setting; Open Science and FAIR Principles; Infrastructure and Services; Talent and Careers; Excellence and Quality; Innovation and Valorisation; Collaboration and Networking; Societal Engagement; Sustainability
EOSC Strategic Research and Innovation Agenda (SRIA) Source: <i>the EOSC Strategic Research and</i>	2021	Federated ecosystem for FAIR data and open science	FAIR principles; Open science; Federation of infrastructures; Data management plans; Interoperability; KPI monitoring; Skills and data	Open Science and FAIR Principles; Infrastructure and Services; Governance and Coordination; Skills and Education; Talent and Careers;

Innovation Agenda (SRIA) (European Open Science Cloud, 2021)			stewardship	Innovation and Valorisation; Collaboration and Networking; Excellence and Quality; Societal Engagement; Sustainability
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Source: Author's compilation from the sources stated in Table 1, Column named "Document and Source"

The document published by the European Commission entitled *A New ERA for Research and Innovation: Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions* states that the ERA was launched in 2000 within the framework of the Lisbon Strategy, and that since 2009, the implementation of the ERA has become an explicit Treaty objective, as expressed in Article 179 of the Treaty on the Functioning of the European Union. The document, which sets out the areas in which member states are invited to participate and contribute toward the realization of the ERA, makes reference to the following principal headings in articulating the core principles and planning arrangements relating to research management within the ERA framework: increasing public resources allocated to research and development (R&D) by establishing an investment and funding structure for research management; prioritizing practices that enhance excellence and effectiveness within the research and innovation ecosystem (including the promotion of mobility and open science policies); rendering research management more integrated with the EU at the level of national policies through the development of joint programmes; ensuring the governance of technology infrastructures; monitoring research performance indicators at both the national and EU-wide levels through a comprehensive monitoring strategy; mainstreaming open science as a principle of research management; facilitating technology and knowledge transfer; promoting research as a career pathway; and encouraging the adoption of gender equality policies in research by member states. In the same document, universities are defined as one of the core constituents of the research ecosystem and are conceptualized as actors that, beyond developing research competencies, are expected to advance collaborations with industry -thereby contributing to regional development and smart specialization strategies- and to participate directly in research and innovation processes ranging from internationalization to societal impact (European Commission, 2020).

In the document entitled *ERA Policy Agenda 2022–2024*, published by the European Commission's Directorate-General for Research and Innovation in 2021, the principal headings around which planning and target-setting in EU research policy are organized have been identified as follows: the governance of open science and knowledge sharing; the reform of the research evaluation system; the development and adoption of research career management and gender equality policies; the protection of academic freedom and the introduction of measures to prevent external interference in R&D and innovation processes; the conversion of knowledge into economic and societal value; ensuring the sustainability of research infrastructures and the continuation of investment in this domain; the adoption of a collaborative approach in which EU values and principles are kept at the forefront while implementing global partnerships; and the establishment of regional research ecosystems. The document further articulates that science and research management must be approached from a professional standpoint. Science managers are conceptualized across a range of specialized roles, including research policy advisors, data stewards, knowledge brokers, technology transfer specialists, innovation managers, and grant management professionals, among others. In carrying out all of these functions, the document indicates that universities

must assume a leading role as central actors within society, undergoing a digital transformation and taking an active part across all domains -from open science policy to excellence in science- in the conversion of knowledge into value (European Commission, 2021).

In its document entitled *European Strategy for Universities*, the European Commission draws attention to the diversity of institutions encompassed within the concept of higher education, stating that "*whether research universities, institutes of technology, arts schools or higher vocational education and training institutions — all different types of higher education institutions are defining features of our European way of life,*" and emphasizes that universities occupy a unique position "at the crossroads of education, research, innovation, serving society and economy" (European Commission, 2022, p. 1)

In the recommendation document entitled *Council Recommendation on a European Research Area Policy Agenda 2025–2027*, published by the Council of the EU in 2025, attention is drawn to the necessity of minimizing fragmentation among higher education, the public sector, and the private sector in the research and innovation management processes of universities, and of aligning these processes with strategic policies; the document further emphasizes the need to develop strategies and mechanisms for establishing a robust network of relationships and collaboration among higher education institutions and other relevant actors (Council of the European Union, 2025, p. 14).

In the document entitled *Horizon Europe Strategic Plan 2025–2027*, published by the European Commission, it is noteworthy that, while a framework is being drawn for the Horizon Europe programme, more specific and specialized aims and objectives are set out throughout the document with respect to research management planning. These include: the strengthening of the ERA through impact-driven programming; the introduction of arrangements to safeguard the EU's strategic assets, interests, autonomy, and security by ensuring research security; the integration of a social sciences dimension into research processes; the conduct of environmental screening to ensure that supported research activities do not cause harm to the EU's environmental policy objectives; and the promotion of evidence-based policymaking through a Science for Policy approach (European Commission, 2024). With respect to higher education institutions, it is observed that an approach is pursued that responds to global and regional priorities and promotes the utilization of research outputs for the benefit of society. This approach encompasses the acceleration of green transition, digital transformation, and technology transfer and commercialization processes, as well as the conduct of capacity-building activities to assist participants from Widening countries and the outermost regions in further converging toward the EU average in research and innovation (European Commission, 2024, pp. 28–29).

As a result of the review conducted across eleven primary documents spanning the period 2020–2025, thirteen categories and thirty-nine norms were identified in which research management and higher education are brought into association. The categories and norms are presented in Appendix 1.

Within the scope of the study, in order to monitor Türkiye's research policies and observe the reflections of the EU ERA upon Türkiye, an examination was conducted of Türkiye's research governance transformation from 2004 to 2016 through a systematic analysis of the decisions of the Bilim ve Teknoloji Yüksek Kurulu (BTYK - Science and Technology Supreme Council), assessing the degree of convergence with ERA norms and EU research management best practices. Established in 1983 and operational until 2016, BTYK served as Türkiye's apex body for science and technology governance, mandated to coordinate national R&D policy across public, academic, and private sector actors (TÜBİTAK, BTYK, n.d.).

The 10th BTYK meeting, which took place on September 8, 2004, represented Türkiye's emergence from a 20-year dormancy in research governance. After the first meeting in October 1989, BTYK remained inactive until September 2004—a gap that left Türkiye's research system without high-level strategic coordination for nearly two decades. The 10th session of the BTYK marked a significant milestone in Türkiye's research governance trajectory through the development of the TARAL, a framework explicitly modelled on the EU's ERA. Structurally, TARAL was organized around three principal pillars: a government pillar encompassing the State Planning Organization (DPT) and relevant public institutions; a research pillar comprising TÜBİTAK and universities; and an industry pillar represented by private sector organizations. This tripartite architecture closely replicates the triple helix governance model characteristic of the ERA, and reflects Türkiye's institutional commitment to aligning its national research system with European standards and practices. The decisions adopted at this session further demonstrated convergence with the EU Framework Programme approach through the adoption of a multi-year planning horizon, the introduction of a performance management culture consistent with the EU's results-based orientation, and the explicit incorporation of ERA alignment principles into the design and nomenclature of the TARAL framework itself (TÜBİTAK BTYK, 2004).

The founding legislative instrument of the BTYK, Decree Law No. 77, was subsequently repealed under Article 106 of Decree Law No. 703, dated 2 July 2018, which was enacted to align certain laws and decree laws with the constitutional amendments introduced at that time (TÜBİTAK, BTYK, n.d.). Given this legislative discontinuity, the present study examines the decisions adopted by the Council up to and including 2016, the year in which its final meeting was convened.

The 2010-2016 period of TARAL's development demonstrates Türkiye's transition from building basic research governance capacity to developing sophisticated, mission-oriented, digitally integrated research management systems as presented in Table 2.

Table 2: Key Characteristics of TARAL Development Based on BTYK meetings (2010–2016)

Phase	Year & Focus	Key Characteristics
1	2010: System Construction	National Science, Technology and Innovation (STI) strategy establishment, centralized governance, infrastructure planning
2	2011: System Steering	Measurable targets introduction, performance-based governance, innovation ecosystem development
3	2012: System Deepening	Human capital focus, education reform, research capacity building
4	2013: Digitalisation	Data infrastructure, sectoral priorities, efficiency improvements
5	2013: Mission-Oriented	Strategic technologies, domestic production, industrial policy integration

6	2014: System Integration	Advanced funding logic, excellence centers, Horizon 2020 integration
7	2015: Institutionalization	University-level strategies, PhD policies, incubation systems
8	2016: Digital Transformation	Industry 4.0, nuclear program, advanced technologies, strategic sovereignty

Source: Author's elaboration based on analysis of BTYK decisions from 2010 to 2016 (TÜBİTAK, n.d.)

Through the formation and development of TARAL, Türkiye laid the foundational groundwork for ERA alignment by adopting a multi-stakeholder governance structure that mirrors the tripartite architecture of the ERA. In doing so, Türkiye formally defined the responsible parties and policy instruments governing its national research management system, thereby creating an institutional basis upon which further convergence with EU research norms and practices could be pursued.

A cross-phase analysis of BTYK decisions spanning the 2010–2016 period reveals differentiated patterns of convergence with EU research management norms across distinct policy domains. Consistent and measurable progress was recorded across all phases in the areas of governance, innovation, infrastructure, and collaboration, reflecting a sustained institutional commitment to strengthening the foundational pillars of Türkiye's research system in alignment with ERA standards. By contrast, domains such as talent development, funding mechanisms, and societal engagement exhibited non-linear trajectories characterized by fluctuating prioritization and episodic emphasis, suggesting that convergence in these areas remained contingent upon shifting policy agendas rather than systematic long-term planning. Most significantly, a set of persistent gaps was identified in the areas of open science, participatory governance, and inclusion frameworks -dimensions that were not systematically addressed throughout the 2010–2016 period. These gaps are particularly noteworthy given that open science and participatory and inclusive governance constitute core principles of the ERA framework, and their relative absence from Türkiye's research policy agenda during this period points to areas where further alignment efforts are most urgently needed.

Beyond the decisions of the BTYK, one of the significant steps taken in the field of research management in Türkiye has been the publication of TÜBİTAK's Open Science Policy in 2019. This policy represents a significant institutional step toward aligning Türkiye's national research infrastructure with internationally recognized transparency and accessibility standards. The policy establishes obligatory deposit procedures for publicly funded research outputs, setting differentiated embargo periods based on disciplinary domain, and integrates data governance requirements into the project lifecycle from the application stage onward. Grounded in the principle that knowledge generated through public resources should be freely accessible, the policy also addresses exceptional circumstances where full disclosure may be restricted due to legal, ethical, or security considerations. Notably, compliance with open science principles is embedded within TÜBİTAK's broader research evaluation mechanisms, meaning that adherence carries direct implications for researchers' funding eligibility and institutional accountability. This policy orientation reflects a convergence with ERA priorities, particularly the EU's long-standing commitment to treating the free circulation of knowledge as a foundational pillar of the European research ecosystem (TÜBİTAK, 2019).

A concrete institutional manifestation of TÜBİTAK's open science commitment is the Aperta platform -TÜBİTAK's Open Archive- which serves as the national infrastructure for the long-term preservation, management, and open accessibility of publicly funded research outputs. The platform provides a centralized repository encompassing a broad spectrum of outputs generated within the national research ecosystem, including publications and associated datasets arising from TÜBİTAK-supported projects, outputs produced by TÜBİTAK institutional researchers, publications incentivized through national academic performance schemes, outputs generated under the Turkish National e-Science e-Infrastructure (TRUBA), and articles published in TÜBİTAK's academic journals. By consolidating these diverse output categories within a single searchable and freely accessible archival structure, Aperta represents Türkiye's operational response to the ERA's expectation that member and candidate states establish sustainable open access infrastructures as a core component of their national research management frameworks (TÜBİTAK ULAKBİM, n.d.-a). However, the empirical landscape of research data management in Türkiye reveals a considerable disconnect between these emerging open science policy commitments and actual institutional practice. A needs assessment survey conducted by TÜBİTAK ULAKBİM among academics affiliated with the national researcher database highlights that while engagement with research data is widespread across disciplines, the governance and stewardship dimensions of data management remain largely unfamiliar to the academic community. Awareness of structured data management planning is strikingly limited, and the predominant data storage behaviour reflects individual rather than institutional solutions, with formally designated repositories playing a marginal role in researchers' workflows. These patterns suggest that the infrastructural and cultural preconditions for embedding open science as a research management norm have not yet been sufficiently cultivated within Türkiye's higher education context, pointing to both the urgency and the feasibility of policy-driven capacity building (TÜBİTAK ULAKBİM, n.d.-b).

Yükseköğretim Kurulu (YÖK-Council of Higher Education)'s approach to research governance within Türkiye's higher education system reflects a deliberate institutional shift away from a homogeneous university model toward a stratified structure in which institutions are expected to pursue clearly defined and differentiated missions. The Research Universities designation programme, launched in 2016, represents the most concrete expression of this philosophy, establishing a competitive and performance-driven framework through which a select group of institutions are recognized, supported, and held accountable for their contributions to the national research ecosystem. Crucially, the framework embeds research management as a formal institutional responsibility rather than an incidental function, with universities expected to demonstrate strategic orientation, resource mobilization capacity, and measurable output across knowledge production, commercialization, and international engagement. The annual performance review mechanism further reinforces this accountability culture by making institutional standing contingent on sustained improvement, thereby incentivizing long-term research governance planning at the university level. Taken together, these features indicate a meaningful convergence between YÖK's higher education research governance model and the ERA's core expectations regarding results-based management, open access, and the central role of universities within broader national and European innovation ecosystems (Yükseköğretim Kurulu, 2020, pp. 18–24).

Building on its research universities framework, YÖK has articulated a forward-looking strategic vision for the period leading up to 2030 that reflects a deepening institutional commitment to research quality, internationalization, and digital transformation. The *Roadmap for Turkish Higher Education Towards 2030* report, prepared in 2025 on the basis of regional stakeholder consultations conducted with university rectors across Türkiye,

identifies five overarching strategic axes -accessibility and inclusivity, quality and excellence, research and innovation, internationalization, and employment-responsive lifelong learning- as the foundational pillars of a globally competitive higher education system. Notably, the document signals a deliberate shift toward a performance-driven, data-informed governance culture, with universities expected to embed digital infrastructure, reputation management, and entrepreneurship into their institutional strategies. The emphasis on research output quality, open access publishing, doctoral education expansion, and cross-border academic collaboration reflects a sustained orientation toward ERA-compatible research governance norms. In this respect, the roadmap represents not merely an internal reform agenda, but a structural effort to position Türkiye's higher education institutions as active participants in the European and global research ecosystem (Yükseköğretim Kurulu, 2025, pp. 1–7, 37–49).

Taken together, the foregoing analysis reveals that Türkiye has constructed a recognizable architecture of research management alignment, yet the distance between policy design and institutional embedding remains a defining characteristic of this process. The TARAL framework, the BTYK decisions, TÜBİTAK's open science policy, and YÖK's stratified university model collectively demonstrate that Türkiye has engaged seriously with the conceptual vocabulary of ERA-compatible research governance. However, the evidence also points to a structural pattern in which top-down policy commitments have not been consistently translated into the operational realities of higher education institutions. The persistent gaps in open science culture, participatory governance, and data management literacy -documented both in policy analyses and empirical survey findings- suggest that alignment is proceeding at the level of frameworks rather than at the level of practice. This distinction is consequential: ERA membership or deep association demands not merely the adoption of compatible policy instruments, but the cultivation of an institutional research management capacity that is self-sustaining, professionally supported, and embedded within the everyday functioning of universities.

Implications for Practice: Actionable Guidelines for Turkish Higher Education Institutions

The findings of this study suggest that closing the gap between ERA-compatible policy frameworks and institutional practice requires deliberate action at the university level across four priority domains. First, with respect to research management staffing, Turkish HEIs are encouraged to move beyond the traditional model of academically-led administrative units and establish dedicated professional research management functions. Drawing on the role typology articulated in the ERA Policy Agenda 2022–2024, this would involve the gradual introduction of positions such as research development officers, data stewards, knowledge transfer specialists, and grant management professionals — roles that are standard in ERA-aligned institutions but remain largely absent from Turkish university structures (European Commission, 2021). Second, regarding data management plan (DMP) policy, institutions should establish a mandatory DMP requirement for all externally funded research projects, modelled on the Horizon Europe requirement (European Commission, 2021) and consistent with TÜBİTAK's 2019 Open Science Policy (TÜBİTAK, 2019). A staged implementation approach — beginning with TÜBİTAK-funded projects and progressively extending to all institutional research — would allow universities to build capacity incrementally. Third, regarding repository governance, the low utilisation of institutional and open access repositories documented in TÜBİTAK ULAKBİM's survey findings points to the need for universities to develop internal deposit mandates, designate responsible governance units, and provide researcher training on the Aperta platform and FAIR data principles (TÜBİTAK ULAKBİM, n.d.-b). Fourth, concerning research assessment reform, institutions should begin aligning their internal academic promotion and performance evaluation criteria with the principles of the Agreement on Reforming Research Assessment, moving away from

exclusive reliance on journal impact factors toward a broader recognition of open science contributions, societal impact, and collaborative outputs (CoARA, 2022, pp. 4-8).

4. Conclusion

This study set out to examine the place of research management within EU research policy and to assess its implications for higher education institutions in Türkiye through a comparative analysis of ERA norms and national policy instruments. The findings reveal that EU research management, as articulated across the ERA framework and its associated policy documents, constitutes a multidimensional governance architecture encompassing thirteen thematic categories and thirty-nine distinct norms. These norms extend well beyond funding and output metrics to encompass open science culture, research career governance, institutional accountability, and the professional recognition of research management as a field in its own right. When assessed against this framework, Türkiye's trajectory demonstrates a meaningful and progressive degree of alignment. The establishment of TARAL as a tripartite governance structure, the systematic evolution of BTYK decisions across successive phases from 2004 to 2016, TÜBİTAK's adoption of a formal open science policy, the development of the Aperta infrastructure, and YÖK's differentiated university model and 2030 roadmap collectively constitute a coherent alignment effort. Structural convergence is most visible in governance architecture, research infrastructure, performance management, and internationalization, which are domains where Türkiye has made demonstrable and sustained progress.

At the same time, the study identifies areas where alignment remains aspirational rather than operational, particularly in open science practice, participatory governance, and institutional research management capacity at the university level. This does not diminish the significance of what has been achieved; rather, it points to the natural next phase of a reform process that has already moved from institutional design to performance orientation. For higher education institutions navigating this transition, the ERA framework offers not merely a compliance standard but a practical governance model -one that positions universities as active knowledge producers, innovation partners, and societal contributors. Türkiye's policy trajectory suggests that the foundations for this transition are in place; what remains is the deliberate investment in professional research management capacity, institutional culture, and data governance infrastructure that will allow these foundations to bear the weight of full ERA engagement.

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Appendix 1

Categories and Norms Identified from EU Policy Documents (2020–2025)

Category	Associated Norms
Strategic Planning and Priority Setting	Long-term vision; Co-creation; Evidence-based development
Governance and Coordination	Multi-level governance; Complementarity; Transparency
Funding and Investment	Sustained investment (3% GDP target); Funding synergies; Performance-based funding
Open Science and FAIR Principles	Open science as the new normal; FAIR data principles; Data sovereignty
Excellence and Quality	Excellence as primary criterion; Research integrity; Quality assurance
Talent and Careers	Attractive research careers; Mobility and circulation; Rewards and recognition reform
Diversity, Inclusion, and Equality	Gender equality; Diversity; Geographical balance
Collaboration and Networking	Transnational cooperation; University–industry–society linkages; International cooperation
Innovation and Valorisation	Knowledge valorisation; Innovation ecosystems; Mission-oriented research
Infrastructure and Services	World-class research infrastructures; Digital infrastructure; Interoperability
Skills and Education	Specialised training; Entrepreneurial skills; Digital and data skills
Societal Engagement	Science communication; Citizen science; Policy impact
Sustainability	Long-term sustainability; Environmental sustainability; Economic sustainability

Source: Author's elaboration based on analysis of EU policy documents (2020–2025) which are A New ERA for Research and Innovation (European Commission, 2020), Council Conclusions on the New European Research Area (Council of the European Union, 2020), A Pact for Research and Innovation in Europe (Council of the European Union, 2021a), Council Conclusions on the Future Governance of the ERA (Council of the European Union, 2021b), European Research Area policy agenda 2022–2024 (European Commission, 2021), Horizon Europe Strategic Plan 2021–2024 (European Commission, 2021), ESFRI Roadmap 2021 (European Strategy Forum on Research Infrastructures, 2021), European Strategy for Universities (European Commission, 2022), Horizon Europe Strategic Plan 2025–2027 (European Commission, 2024), European Research Area Policy Agenda 2025–2027 (Council of the European Union, 2025), and the EOSC Strategic Research and Innovation Agenda (SRIA) (European Open Science Cloud, 2021).