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# *Generativity is a Core Value of the ESJ:*
# *A Decade of Growth*

Erik Erikson (1902-1994) was one of the great psychologists of the 20th century[1]. He explored the nature of personal human identity.  Originally named Erik Homberger after his adoptive father, Dr. Theodore Homberger, he re-imagined his identity and re-named himself Erik Erikson (literally Erik son of Erik).  Ironically,  he rejected his adoptive father's wish to become a physician, never obtained a college degree, pursued independent studies under Anna Freud, and then taught at Harvard Medical School after emigrating from Germany to the United States.  Erickson visualized human psychosocial development as eight successive life-cycle challenges.  Each challenge was framed as a struggle between two outcomes, one desirable and one undesirable.  The first two early development challenges were 'trust' versus 'mistrust' followed by 'autonomy' versus 'shame.'  Importantly, he held that we face the challenge of **generativity** versus **stagnation in middle life**.  This challenge concerns the desire to give back to society and leave a mark on the world.  It is about the transition from acquiring and accumulating to providing and mentoring.

Founded in 2010, the European Scientific Journal is just reaching young adulthood.  Nonetheless, **generativity** is one of our core values.  As a Journal, we reject stagnation and continue to evolve to meet the needs of our contributors, our reviewers, and the academic community.  We seek to innovate to meet the challenges of open-access academic publishing.  For us,

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[1] Hopkins, J. R. (1995). Erik Homburger Erikson (1902–1994). *American Psychologist*, 50(9), 796-797. doi:http://dx.doi.org/10.1037/0003-066X.50.9.796

generativity has a special meaning. We acknowledge an obligation to give back to the academic community, which has supported us over the past decade and made our initial growth possible. As part of our commitment to generativity, we are re-doubling our efforts in several key areas. First, we are committed to keeping our article processing fees as low as possible to make the ESJ affordable to scholars from all countries. Second, we remain committed to fair and agile peer review and are making further changes to shorten the time between submission and publication of worthy contributions. Third, we are looking actively at ways to eliminate the article processing charges for scholars coming from low GDP countries through a system of subsidies. Fourth, we are examining ways to create and strengthen partnerships with various academic institutions that will mutually benefit those institutions and the ESJ. Finally, through our commitment to publishing excellence, we reaffirm our membership in an open-access academic publishing community that actively contributes to the vitality of scholarship worldwide.

*Sincerely,*

## Daniel B. Hier, MD

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# The Architecture of Wind: Microclimatic Strategies in Roman *Villae Maritimae* across the Mediterranean (Case Studies from Tripolitania)

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## Abstract

This study examines four maritime villas located in the Tripoli area, aiming to highlight how Roman domestic architecture adapted spatially to local climatic conditions. In particular, it hypothesises that the combination of *porticus* and *cryptoporticus* formed an architectural device conceived to exploit the natural direction of the winds in order to ensure the passive cooling of residential spaces. Such interpretations, especially concerning the Tripolitanian villas, were partially advanced by mid-twentieth-century scholars. However, they have never been systematically organised within a comparative, interprovincial framework. The data employed in this study derive from a doctoral project that analyses, through published cartography and relevant scientific literature, the architectural evidence of maritime villas along the coasts of the Roman Mediterranean provinces, with the aim of identifying common architectural typologies. Preliminary findings indicate that these strategies of environmental architecture may represent a regional peculiarity of Tripolitania, rather than a broader pattern within the Roman world.

**Keywords:** Roman maritime villas, Tripolitania, Passive cooling, Porticus and cryptoporticus, Environmental architecture

## Introduction

This study is part of a doctoral project in Sciences for Cultural Heritage and Production (funded by the Cultural Heritage Active Innovation for Sustainable Society PNRR – CHANGES, SPOKE 6, CUP E63C22001960006), which investigates Roman *villae maritimae* within the Mediterranean context[1].

Through a comparative analysis of the architectural layouts from other Roman provinces[2], the villas of Tripolitania stand out for an architectural design that was carefully calibrated to exploit local climatic conditions, with particular attention to the role of the wind. This adaptation also entailed an aesthetic modulation of space and the adoption of architectural solutions designed to regulate environmental conditions.

The synergy between nature and architecture extended beyond mere technical functionality, reflecting a sophisticated environmental awareness among the designers, who transformed natural forces into instruments of prestige and comfort serving both daily life and the optimal preservation of products from the *fundus*. In this sense, the Roman villa may be understood as an integrated climatic device engaging with the landscape and expressing, through architecture, an ideal of harmony between humans and their environment[3].

The study examines how the predominantly regional Mediterranean wind[4] patterns influenced the spatial layout of the villas, hypothesising that design strategies were developed to protect against prevailing winds without compromising sea views. Particular attention is given to the use of the sea

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[1] The research project, through a comprehensive survey of all sites corresponding to the definitions of 'villa marittima' and 'coastal villa' (Lafon 2001), aims to define one or more architectural typologies of Roman dwellings in the Mediterranean area and to develop a unified reference system for managing the archaeological data collected. This will be achieved through the creation of a dataset - based on information gathered from scholarly literature - designed to serve as an extensive repository organised according to chronological, topographical, and architectural criteria.

[2] By way of mere exemplification, two cases may be cited: the villa of Torre de Benagalbón, located in the Roman province of *Baetica*, and that of Els Munts, in *Tarraconensis*. In both instances, the arrangement of the *porticus* and *cryptoporticus* does not serve purposes of climatic adaptation but rather appears as an architectural expedient intended to create shaded areas for promenading.

[3] On how the *villae maritimae* represent a paradigmatic example of the "sintesi tra natura e artificio, tra ambiente e opera dell'uomo" (Musso 2024, p. 224), see Filser et al. 2017, pp. 74–84.

[4] For further insight into regional wind systems, see Zecchetto & Cappa 2001, p. 52.

breeze[5] as a resource for the natural cooling of interior spaces, and to the spatial arrangement of the *porticus*[6] and *cryptoporticus*[7].

**Methods**

Several examples identified during the typological survey of Mediterranean *villae* confirm this careful design approach, with particularly notable recurrence in the villas of North Africa. These villas overlook spectacular coastal landscapes and display complex configurations organised around internal courtyards, colonnades, and windbreak walls-features designed to mitigate the impact of marine currents while shielding against hot winds from the desert hinterland. These measures contribute to the creation of climatically balanced spaces, functional for daily life.

While rooted in Roman building tradition, this approach is locally enriched by specific solutions emerging from an osmosis between Roman technical expertise and endemic environmental knowledge[8], particularly evident in the region of Tripolitania.

An examination of the floor plans studied thus far-while recognising the preliminary and partial nature of this research[9]-shows that, despite their differing layouts, most of the villas in Tripolitania share certain common features. An exception of the villa at Wadi Zennad, near the former Jewish

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[5] For an overview of the impact of sea breeze penetration into the coastal hinterland, see Obermann-Hellhund 2022, pp. 5–6.

[6] For a definition of the *porticus*: "a column-supported roofed space, open or partly closed" (Clarke 1991, p. 377).

[7] As Clarke observes, in the *villa maritima* the arrangement of the *tablinum* and the residential quarters is reversed compared to the prescriptions found in Vitruvius (*De architectura* 6.5.3), precisely in order to provide the inhabitants with an uninterrupted view of the sea (Clarke 1991, p. 19). On the use of the *cryptoporticus* in Roman architecture, see Giuliani 1973, pp. 79–98; for a definition: "underground or partially hidden corridor" (Clarke 1991, p. 374); "A ground-level or semisubterranean vaulted corridor, usually lit by openings in the vault. Its primary function is normally to buttress an adjacent structure, and secondarily it is used as a shady place to walk or store goods" (Sear 2021, p. 284).

[8] A comparative study of built structures and wind channelling in Roman-period architecture (the Roman fort of the Kharga Oasis) may be found in Rossi & Magli 2017, pp. 1–16.

[9] The four villas examined in this contribution were selected based on the available literature, the data derived from the excavations carried out (unfortunately none recent, as is also the case for the reference literature), the state of preservation of the uncovered structures, and similar architectural characteristics, in order to allow for a meaningful comparison between them. The same architectural scheme could also be applied to the so-called Villa del Nilo and that of Gurgi; however, the state of preservation of their structures advises caution, and these two villas have therefore been excluded from the analysis (as already noted in Salza Prina Ricotti 1968–1970, p. 25).

cemetery of Homs[10], which exhibits a typically Roman layout (known as the "tetti a mansarda" type[11]).

This exception, however, further supports the hypothesis that local microclimatic conditions strongly influenced villa design choices[12], prompting a form of climatic adaptation that departs from codified layout schemes and confirms the primacy of environmental factors over architectural orthodoxy. Indeed, as has long been recognised, "a prevailing regional wind changes its pattern as it flows through a built environment"[13].

## Results

Planimetric observation of the maritime villas located in other provinces, and of Roman *domus*, reveals that they are typically arranged around one or more *peristylia*. Villas near Tripoli, however, display an elongated west–east layout, with monumental façades featuring porticoes and large-windowed rooms facing north towards the sea, while the rear façade is closed off, almost "blind", to the south. The principal façade's orientation towards the sea is not solely motivated by aesthetic considerations (to enjoy the sea view) or functional ones (some of the Tripolitan villas include a landing stage near the main entrance[14]), but primarily to harness the fresh breeze coming from the sea and to protect the residential areas from the desert winds blowing from south to north, thereby creating a microclimate favourable both to daily life and to the preservation of goods stored in rooms designated as warehouses[15], originating from the *dominus'* agricultural estate (*fundus*).

It is evident that the organisation of space, through the creation of buffer zones enclosed between the *porticus* and the *cryptoporticus[16]*, reflects

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[10] Bartoccini 1927a, pp. 226-232; Bartoccini 1927b, pp. 213-248; Salza Prina Ricotti 1968-1970; Matoug 1995, p. 155; Mattingly 2005, p. 196; Musso 2010, pp. 49-78.

[11] Salza Prina Ricotti 1968-1970, p. 30.

[12] Michael Feige (2022) identifies specific design strategies related to wind dynamics in the constructional choices of certain rural villas in the Roman countryside. According to the scholar, in these sites the arrangement of the rooms intended for the storage of produce is consistently located on the northern side of the structures, so as to make optimal use of the beneficial effect of the cool northern winds and in full accordance with the ancient sources, including Columella (XI, 2, 2-98), Varro (*rust.* I, 57), and Vitruvius (VI, 6, 2 and VI, 6, 4) (Feige 2022, pp. 175-179).

[13] Gao et al. 2012, p. 148. On the subject, see also Patz et al. 2005, pp. 310-317.

[14] A landing stage has been definitively identified for the Villa of the Maritime Odeon (Salza Prina Ricotti 1970-1971, pp. 148-149), while one is hypothesised for the Villa of the Small Circus (Salza Prina Ricotti 1970-1971, pp. 159-160) and for Zliten (Aurigemma 1926, p. 18).

[15] As hypothesised for the Villa of the Race of the Nereids (Salza Prina Ricotti 1968-1970, pp. 31-32).

[16] Recent studies on the configuration of modern buildings confirm that parallel arrangements of a paratactic type (comparable, in fact, to the positioning of the two ancient architectural

a form of ecological intelligence *ante litteram*, in which no orientation is arbitrary but responds to a refined environmental logic.

**Discussion**

An example [Fig. 1] of the difference observable between the north and south façades of a villa can be seen at the site of Dar Buc Amméra[17] (also known as the Villa of Zliten), which contrasts at the planimetric level with the typical Roman villa in which the extremely elongated north-facing plan becomes the regional paradigm[18]. The principal parts of the complex are not arranged, as usual, around the atrium or peristyle but rather along the hill's ridge on which the villa stands, oriented east-west parallel to the coast. It is likely that the villa had two storeys[19]. In this complex, the residential rooms all overlook a colonnaded portico, later enclosed as a cryptoporticus (equipped with openings[20]), while behind the *pars urbana* (to the south) lies a second cryptoporticus, partially cut into the rock, situated roughly half below the floor level[21].

This lowering of the floor level, besides construction requirements, may also reflect strategies for maintaining coolness, similar to those employed in subterranean domestic spaces and rural storehouses in the premodern period.

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elements, the *porticus* and the *cryptoporticus*), produce evident benefits in terms of wind performance (Gao et al. 2012, p. 149).

[17] Aurigemma 1926; Gatti 1957, pp. 298-299; Mansuelli 1958, p. 99; Parrish 1985, pp. 137-158; Mattingly 2005, pp. 256-257; Wilson 2018, p. 274 and p. 293. According to Aurigemma, the villa could be identified as the *statio Seggera* of the Antonine Itinerary, or alternatively, the villa itself may have given its name to the *statio* (Aurigemma 1926, p. 21).

[18] Already noted by Aurigemma 1926, p. 20.

[19] On the basis of certain stylistic comparisons of the mosaics and frescoes on the vault of the southern cryptoporticus, David Parrish suggests that the villa-or at least the date of its embellishment with decorative features-can be dated to between the late 2nd and the mid-3rd centuries AD, specifically to the stylistic current that emerged following Emperor Septimius Severus's visit to Egypt in 199 AD (Parrish 1985, p. 141 and pp. 144-145).

[20] In the portico, the lower parts of the bases of nine columns were found *in situ*. At a later stage, the portico was enclosed with a wall, incorporating the columns within it and creating large windows overlooking the sea (Aurigemma 1926, p. 34).

[21] The cryptoporticus had a beaten-earth floor and a barrel vault frescoed with figures of deities, and was carved into the rock. Approximately halfway along its length, a stone staircase provided access to the upper floor (Aurigemma 1926, p. 34; also see Salza Prina Ricotti 1968-1970, p. 25).

**Figure 1:** Villa of Dar Buc Amméra (also Villa of Zliten). The background of the map has been derived from Google Maps (image acquisition date: 25 August 2025; WGS84/EPSG:4326 long. 13.7406; lat. 32.7821)



**Figure 2:** Villa of the Nereid Race of Tagiura. The background of the map has been derived from Google Maps (image acquisition date: 25 August 2025; WGS84/EPSG:4326 long. 14.1753; lat. 32.6984)

Another example [Fig. 2] of the north façade facing the sea, completely without windows and featuring openings nearly three metres wide, is found in the villa of Tagiura[22], known as the Villa of the Race of the Nereids[23]. Here, the front portico facing north towards the sea is screened by a *viridarium* and enclosed by "transenne," which functioned similarly to the modern mashrabiya, designed to capture the wind and ensure passive cooling of the interior spaces[24]. Furthermore, the arrangement of domestic rooms between the front portico and the rear cryptoporticus created a sort of buffer zone, sheltered and isolated from the outside, where the temperature was naturally cooler. These rooms were partly cut into the rock and accessed by steps, with the floor level situated approximately two metres below the base of the cryptoporticus. Behind them, the cryptoporticus-whose height is presumed to be greater than that of the villa's front section-may have featured a windowed north-facing wall, thereby directly benefiting directly from the sea breeze passing over the roofs of the portico and domestic rooms[25].

Thus, a multi-level system of natural ventilation is configured, whereby air and light are modulated through spatial articulations reflecting a profound empirical understanding of thermal dynamics[26].

A clarification is necessary regarding the presence of the *viridarium* situated between the sea and the front portico, as suggested by Antonino Di Vita[27] (1966): this would be an exception within the context of Tripolitanian villas, since, starting with the Villa of Silin[28], it is more likely that such gardens were located at the rear of the structure, in areas found to be free of building remains[29]. This is consistent with both ancient literary and iconographic sources[30]. Indeed, Pliny the Younger tells his friend Gallus that, at his Laurentine villa, he had to replace the boxwood hedge with simple rosemary,

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[22] The walls of one of the *ambulacra* yielded bricks bearing four different stamps, attributable to the Roman workshop of *Domitia Lucilla Minor,* mother of Emperor Marcus Aurelius, and to the *figlina Terentiana*, owned by Domitia Lucilla and later by Marcus Aurelius and Faustina. On this basis, Di Vita (1966) proposes that the construction of the villa dates to a period between 157 and 161 BC. The villa was certainly occupied, at least in part, during the fourth century AD (Di Vita 1966, pp. 18–19).

[23] Di Vita 1966; Mattingly 2005, p. 227; Wilson 2018, pp. 286-287.

[24] Salza Prina Ricotti 1968-1970, p. 25.

[25] Salza Prina Ricotti 1968-1970, pp. 31-32.

[26] Differently, Di Vita 1966, 29: the scholar maintains that this arrangement was intended solely to create a shaded promenade.

[27] Di Vita 1966, p. 14.

[28] Di Vita 1975, pp. 165-187; Al Mahjub 1983, pp. 299-306; Mattingly 2005, p. 257; Bianchi 2002, pp. 1729-1749; Dolciotti 2010, pp. 659-670, tav. LXIII; Wilson 2018, pp. 290-297; Musso 2024, pp. 235-249.

[29] Salza Prina Ricotti 1968-1970, p. 31.

[30] For an overview of the iconography of maritime villas, see Felici 2018, pp. 29–42, with earlier bibliography.

which proved more resistant to the salt-laden sea breeze (*Epistulae* II, 17).
Likewise, iconographic sources often depict trees belonging to gardens and
*viridaria* to the rear of buildings[31], and never at the front.



**Figure 3:** Villa of the Maritime Odeon. The background of the map has been derived from
Google Maps (image acquisition date: 25 August 2025; WGS84/EPSG:4326 long. 13.4840;
lat. 32.8421)

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[31] Gatti 1957, pp. 297-298.

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The Villa of the Maritime Odeon[32] [Fig. 3] features a portico in the front section of the complex, designed with a special perspectival illusion so as to appear curved to those approaching the villa from the sea, and a cryptoporticus at the rear, above which the rooms of the *pars urbana[33]* are arranged. In this villa, even if the *porticus*/buffer zone/*cryptoporticus* scheme is not fully realised, one can nonetheless discern the intention to create a form of shelter for the residential area of the complex, which is screened from the south–north winds by the structures positioned behind the villa's front section, which occupies the promontory. The same principle can be applied to the Villa of the Small Circus[34] [Fig. 4], which displays an alternation of *porticus* and rooms in the rear section, while maintaining a west–east spatial distribution in line with the orientation of the coastline. The design of these luxurious residences thus appears to be orchestrated as a functional scenography: optical illusion and architectural order are not merely symbols of *status[35]* but integral elements of environmental control.
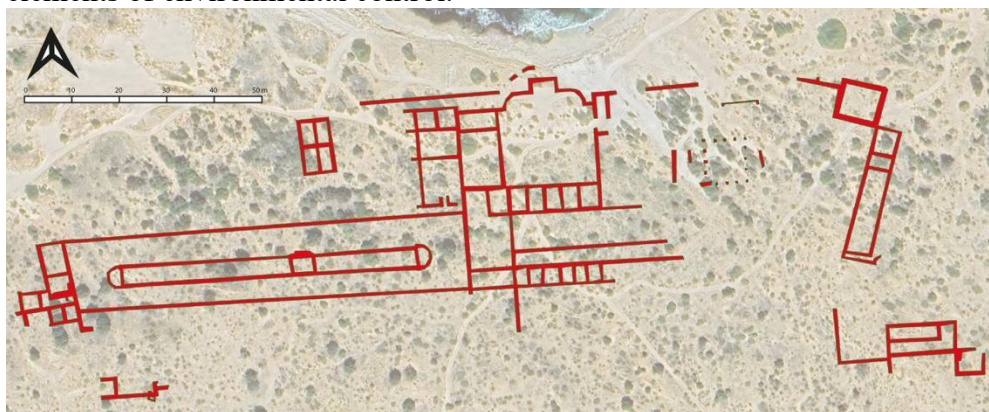


**Figure 4:** Villa of the Little Circus. The background of the map has been derived from Google Maps (image acquisition date: 25 August 2025; WGS84/EPSG:4326 long. 14.6487; lat. 32.5357)

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[32] Salza Prina Ricotti 1968–1970, p. 31; Salza Prina Ricotti 1970–1971, pp. 140–154; Wilson 2018, p. 275 and p. 288. The villa takes its name from a stepped structure (12) with a diameter of 14 metres, cut into the rock of the promontory.

[33] The villa may be dated to a period not earlier than AD 69, when the last invasion by the Garamantes took place (Tacitus, *Hist*. IV, 50; Pliny, *N.H.* V, 5, 38). This hypothesis arises from the presence of limestone thresholds in the *diaetae* of the *porticus*'s projecting sections, where the holes for the central latch bolt are still clearly visible, showing that the French windows could be opened fully towards the sea. Such an arrangement would only have been feasible in areas without particular threats or fear of possible attacks (Salza Prina Ricotti 1970–1971, p. 141).

[34] Salza Prina Ricotti 1970–1971, pp. 154–160; Wilson 2018, pp. 287–289. The villa remained in use over a chronological span from the first to the third century AD (Salza Prina Ricotti 1970–1971, p. 141).

[35] For a discussion of the cultural implications of the *dominus* of Tripolitanian villas, see Musso 2024, pp. 243–246.

It is clear that the architectural and spatial adaptations of the maritime villas of Africa Proconsularis - and particularly those in the Tripolitanian region - were designed to make the most of the cooling potential of the sea breeze blowing from the north, while mitigating the harmful effects of the *Ghibli*, a hot wind that can reach up to 54°C[36]. This dry, dusty wind, also known as the *Khamsin*, comes from the south or south-east and sweeps along the African Mediterranean coast. The Ghibli carries hot tropical air and occurs mainly in spring, but also in autumn, and can provoke intense sandstorms[37].

To further investigate and quantify the influence of the *Ghibli* on maritime villas, meteorological data from 21 March 2025, extracted from the Copernicus Climate Change Service Climate Data Store[38], were selected to represent the onset of spring. Although these are modern observations, it is reasonable to assume that similar conditions could have prevailed during the Roman period, given the persistence of seasonal atmospheric circulation patterns in the Mediterranean[39]. Spring was chosen illustratively, as it marks the period when the *Ghibli* begins to blow with greater regularity, thereby allowing a comparison between the orientation and layout of the villas and the direction and intensity of surface wind as reconstructed from the U and V components.

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[36] Warner 2004, pp. 90-91.

[37] For the *Ghibli* and *Khamsin*, see Obermann-Hellhund 2022, p. 5.

[38] This dataset is released for use under a CC-BY licence.

[39] It has not been possible to obtain modern climatic data or comparative studies with ancient conditions for the area of Tripolitania under consideration; however, in general, "Die Ergebnisse moderner Klimamessungen können daher auch als Richtwerte für die antiken Bedingungen angewendet werden" (Feige 2022, p. 179, n. 748).
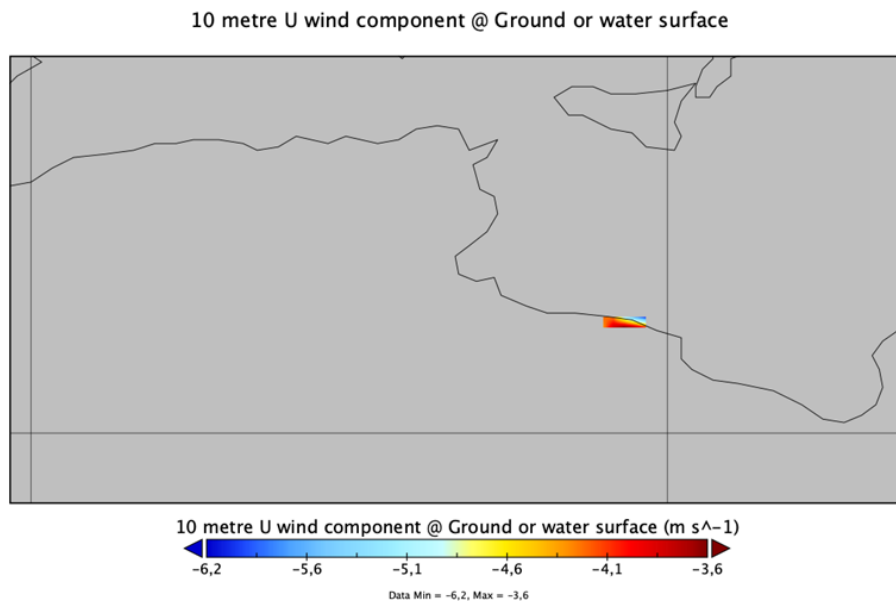
**Figure 5:** Representation of the U wind component in the studied area. The data were obtained from the Copernicus Climate Change Service Climate Data Store and refer to 21 March 2025 (CDS 2023), and were graphically processed using @Panoply (Version 5.6.2, NASA Goddard Institute for Space Studies [NASA/GISS], 2880 Broadway, New York, NY 10025, USA)
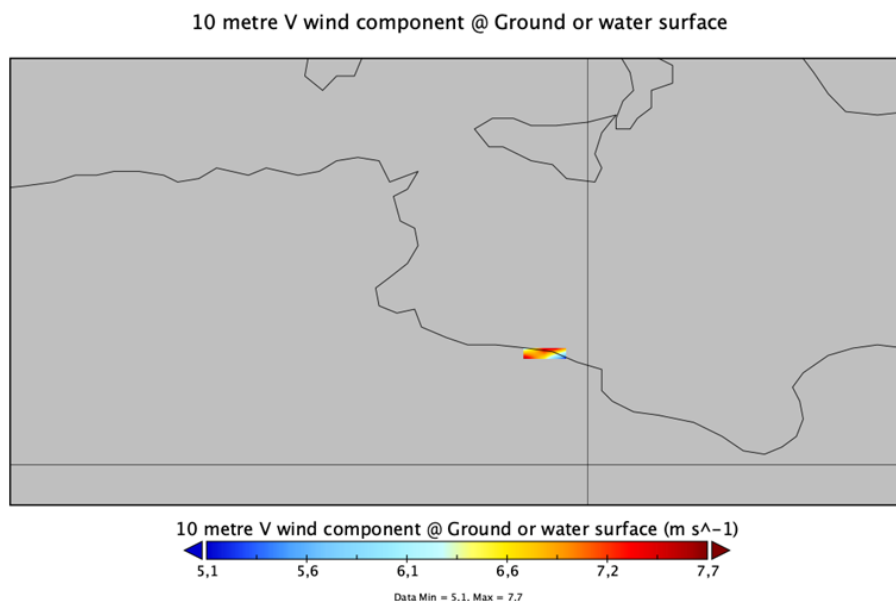


**Figure 6:** Representation of the Vwind component in the studied area. The data were obtained from the Copernicus Climate Change Service Climate Data Store and refer to 21 March 2025 (CDS 2023), and were graphically processed using @Panoply (Version 5.6.2, NASA Goddard Institute for Space Studies [NASA/GISS], 2880 Broadway, New York, NY 10025, USA)

The U and V parameters represent the two horizontal components of wind at 10 metres above the ground or water surface, which constitutes the international meteorological standard for the measurement of surface wind. The U component describes the east–west direction: positive values indicate wind originating from the west and blowing towards the east, while negative values indicate wind originating from the east and blowing in the opposite direction. The V component describes the north–south direction: positive values correspond to wind blowing towards the north from the south, whereas negative values indicate wind blowing towards the south from the north. Analysis of both components (U and V) allows the reconstruction of the total wind speed and direction.

For the graphical interpretation of the data displayed via Panoply (Figs. 5–6), the component values are represented using a colour scale ranging from blue to light blue, to yellow, orange, and red. This scale allows rapid identification of wind intensity and direction. The geographic data were selected based on a quadrilateral encompassing the area containing the sites of the four analysed villas.

The understanding of the relationship between built forms and wind-induced airflow is important, as it facilitates comprehension of the cooling and ventilating effects, given that built structures create varying resistance to airflow depending on their shapes, sizes, and relative arrangement[40].

The rooms reserved for domestic life or for the storage of agricultural produce, situated between areas delimited by porticoes and cryptoporticoes, were well ventilated thanks to large windows kept wide open during the cool summer nights and closed during the day to prolong the nocturnal freshness as much as possible. Moreover, these rooms were never directly exposed to sunlight, thereby maintaining an ideal microclimate for habitation.

**Conclusions**

In this way, architecture emerges not only a climatically efficient response but also an instrument of social distinction, where the control of climate also implies control of comfort and self-representation.

It will be of great interest to extend these - still preliminary - observations on spatial adaptation to other maritime contexts of Mediterranean villas in the next stages of my research, in order to assess whether such strategies of 'environmental architecture' represent a regional specificity or form part of a broader design practice shared across the Roman world.

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[40] Gao et. al. 2012, p. 148.

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**Authorship**

I declare that I am the author of this contribution, prepared through the reuse and elaboration of data obtained from the literature. All ideas or thoughts originating from other authors have been properly attributed, either by referencing the relevant bibliographic citation or, when quoted verbatim, enclosed in quotation marks and accompanied by the bibliographic reference.

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**Data Availability:** All data are included in the content of the paper.

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# Toward Harmonised Governance of Cultural Routes: Sicilian Industrial Heritage Conservation Without Valorisation

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## Abstract

Sicily represents an emblematic case of industrial heritage governance in Italy. Despite the absence of specific legislation, the region holds a historically significant legacy, particularly linked to the sulphur mining industry. In the absence of a unified legal and policy framework, valorisation increasingly depends on local communities and grassroots initiatives. The study adopted a case study approach, selecting Sicily for its complex governance system and long-standing engagement with cultural heritage policies. Therefore, it combined a multilevel review of national and regional legislation with semi-structured interviews conducted through the key informant method at the Sicilian sites of *Trabia-Tallarita* and *Floristella-Grottacalda*. Documentary and interview data have been cross-referenced, highlighting the relationship between European priorities, national policy frameworks and local practices. Findings reveal a misalignment between European valorisation strategies and regional implementation, underscoring the need for cohesive governance, strengthened local capacity, and sustainable funding. Within such a framework, Sicily requires a coordinated national strategy to align local cultural initiatives with European standards and ensure effective heritage valorisation.

**Keywords:** Industrial heritage, community, decentralization, governance, mining

## Introduction

Over the last decade, the concept of landscape, understood as the diachronic sedimentation of human practices interacting with the territorial matrix, has gained central importance in policies for the protection and valorisation of cultural heritage. In 1987, the Council of Europe launched the "European Cultural Routes Programme," promoting transnational cooperation and local community participation in cultural heritage management and valorisation (CM/Res, 66-67/2013). These routes operate as networks that transcend geographic and temporal boundaries, fostering connections among communities, cultures, and traditions, as well as prompting Member States to implement initiatives aligned with European objectives.

Sicily, with its millennial cultural traditions, provides a rich case study for understanding the complexity of heritage enhancement in the European panorama. Its heritage extends beyond monuments and artifacts, constituting a living narrative that shapes national identity and collective memory. Cultural heritage also plays an educational role, offering tangible encounters with history and facilitating critical engagement with the past. Within this framework, industrial heritage is a crucial yet often overlooked component, requiring scholarly and policy attention due to its historical, architectural, and cultural significance. The interaction between industrial heritage and pre-existing cultural layers is essential for contemporary approaches to heritage interpretation and reuse. A paradigmatic example is São João da Madeira in Portugal, where government initiatives fostered industrial heritage valorisation, earning the "National Tourism Award" and serving as a model of sustainable, networked management within the *European Route of Industrial Heritage* (ERIH).

However, while the EU promotes cross-border cooperation and cultural enhancement, national governments retain wide discretion in policy implementation, resulting in divergences in strategic priorities, funding, and institutional frameworks. Regional initiatives, such as the mining complexes of *Trabia-Tallarita* and *Floristella-Grottacalda* in Sicily, rely heavily on local actors but face challenges in aligning with transnational strategies due to fragmented governance.

This study examines models for industrial heritage valorisation under the European Cultural Routes framework, focusing on Sicily. The methodology combines a critical literature and legislative review with empirical interviews with ERIH management and staff from the Sicilian industrial heritage sites. The final aim is to underline the misalignment between European cultural priorities and local governance systems, while

supporting the need for coordinated policies, transnational cooperation, and sustainable local development. This perspective deepens the debate on industrial heritage, understood as a narrative of a territory's authentic culture. At the same time, it opens the way for reimagining Sicily's heritage and historical identity through its mining and industrial past. This perspective highlights an underexplored dimension with strong potential for both cultural and tourism development.

**Literature review**

In Italy, the systematic study and valorisation of industrial heritage gained momentum in the 1970s, during a period of deep economic and social transformation, when many historical factories were decommissioned or demolished without regard for their cultural value. Scholars such as Bruno Corti (1991) emphasized industrial sites as vital records of socio-economic and technological evolution, leading to the establishment of the I*talian Association for Industrial Archaeological Heritage*[1] (AIPAI). This network has been crucial for both theoretical and practical developments, promoting the preservation, reinterpretation, and integration of industrial landscapes into contemporary spatial planning and cultural strategies. Italian studies on industrial heritage now face a dual challenge: both completing a comprehensive census and documentation and developing methodological approaches that account for ongoing economic and social transformations (Ferrero *et al.*, 2024). Integrating industrial heritage with tourism offers new valorisation opportunities, requiring management models that combine conservation with economic sustainability and environmental stewardship.

Although Italian legislation supports heritage conservation, valorisation remains fragmented, often dependent on single initiatives by local administrations, professional associations, or heritage communities[2] (Cammelli, 2017). Coordinated policy and regulatory actions are essential to promote shared cultural strategies, encourage responsible tourism, and support local development. This includes fostering slow tourism, safeguarding local traditions, and revitalizing marginalized areas. Urban and rural regeneration projects that repurpose industrial sites into creative districts exemplify the potential for inclusive and sustainable development.

In this regard, cultural routes have become instrumental in promoting sustainable tourism and local development. The World Tourism Organization identifies cultural routes as among the fastest-growing tourism segments, with annual growth exceeding 15%, generating significant economic benefits for

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[1] Official website available at: https://www.aipaipatrimonioindustriale.com/
[2] "a heritage community consists of people who value specific aspects of cultural heritage which they wish, within the framework of public action, to sustain and transmit to future generations" (art. 2b, Faro Convention, 2005).

the regions they cross (UNWTO, 2018). However, the viability of this model depends on integrated policies that harmonize tourism development with heritage preservation and the protection of local cultural authenticity (Richards, 2018). Achieving this balance requires active collaboration among public institutions, private actors, and civil society under a coherent framework aligned with European cultural policies, ensuring that industrial heritage contributes meaningfully to both cultural and socio-economic development.

**Methods**

To examine the scope of the complex normative and organizational framework governing cultural routes, the case study method was adopted, as it proves effective in understanding the structure, operational dynamics, and broader implications of the phenomenon. Within this framework, Sicily was selected due to its stratified governance system and long-standing engagement with cultural heritage policies. The research combined a comprehensive review of national and regional legislation, both on cultural routes and industrial heritage, with a set of direct interviews conducted through the *key informant method*. These sources were then cross-analysed and integrated to provide a broader, more in-depth, and balanced perspective.

As a preliminary step, key conceptual categories – such as "cultural route," "valorisation," and "industrial heritage" – were defined from both semantic and legal perspectives. Subsequently, a comprehensive review of legislative texts at multiple governance levels was conducted, including both national laws or directives and regional regulations. The legislative instruments were identified and analysed to highlight the main regulatory challenges, both in terms of the relationship between the Italian and European legal frameworks as well as with respect to internal dynamics at national and interregional levels. This multilevel legal analysis aimed to identify structural inconsistencies, gaps in coordination, and points of friction between European policy principles and their implementation within the local context. As a region lacking specific legislative frameworks, yet rich in industrial heritage sites, Sicily exemplifies the tensions between top-down policy objectives and bottom-up practices of heritage valorisation. To deepen the practical effects of Sicily's ambiguous and uneven legal framework on industrial heritage enhancement via cultural routes, the analysis employed the "key informant" method, a qualitative approach designed to gain insight into local-level dynamics. Three semi-structured interviews were conducted, each lasting approximately 30 minutes. These included two interviews with local staff managing prominent Sicilian mining parks – listed as "places of interest" on the official ERIH website – and one with Francesco Antoniol, the Italian Communication Manager for ERIH. The sampling strategy was purposive,

selecting individuals directly involved in the strategic development and operational management of industrial heritage sites. The interviews with Sicilian local staff were conducted by telephone and structured around five thematic sections: (i) identity and mission of the site; (ii) potential network involvement; (iii) activities and projects currently implemented; (iv) routes, opportunities and current difficulties; and finally, (v) future vision. The ERIH interview was also conducted by phone. The session lasted nearly an hour and was divided into two thematic sections. The first focused on the internal dynamics of the ERIH Association, exploring its origins and organizational structure, while the second examined the external role of local communities in industrial heritage management, their perceptions, levels of involvement and potential for development.

To ensure validity and to provide a comprehensive perspective, the research employed a triangulation strategy. Triangulation here refers to the systematic comparison and integration of secondary sources (in this case, legislative and policy documents) and primary qualitative evidence (semi-structured interviews). The two sets of findings were cross-referenced, with particular attention to potential points of convergence (e.g., alignment between normative objectives and local practices) and divergence (e.g., inconsistencies between formal policy principles and actual implementation). This methodological approach allowed the study not only to validate information across sources but also to reveal critical discrepancies and tensions that would have remained hidden if relying exclusively on legislative review.

## Results
### Legislative analysis

Starting from the analytical perspective of Italian legislation, cultural routes are composed of cultural and landscape elements that fall within the broader scope of cultural heritage protection, governed primarily at the national level.

The Italian Constitution of 1948 laid the groundwork for this system, emphasizing the promotion of science, culture, and the preservation of landscape and historical heritage. Initially, this framework did not provide for regional autonomy in cultural matters. However, between the 1970s and the 1990s, a process of decentralization was initiated through a series of Presidential Decrees, maintaining the State's control over legal protection and binding regulations, while delegating the responsibilities related to the management and promotion of cultural assets to regional authorities.

The core legislative reference remains the "Codice dei beni culturali e del paesaggio" (Cultural Heritage and Landscape Code, Legislative Decree No. 42/2004 – hereafter "the Code"), which outlines procedures for the recognition and protection of heritage assets (e.g., Arts. 12–13). Nevertheless,

the Code does not define "cultural routes" as a separate legal category. A first, albeit indirect, legal recognition of cultural routes was introduced in 1997 through the so-called "Riforma Bassanini", which introduced the idea of routes as instruments for heritage enhancement and was later repealed in 2004. Additional references can be found in Law No. 651/1996 and Law No. 270/1997, which allocated resources to the development of pilgrimages and historical routes in preparation of the Jubilee Year 2000. More recently, the 2016 Directive from the Ministry of Cultural Heritage and Tourism declared it the "Year of the Paths", explicitly promoting "cammini" (walkways) as thematic routes inspired by shared values and slow mobility. In 2025, a new legislative titled "Disposizioni per la promozione dei cammini quali itinerari culturali" (Regulations for promoting walkways as cultural itineraries) was introduced, with a focus on non-motorized travel, such as walking or cycling, and the enhancement of cultural, natural, and recreational values.

In the absence of a national legal framework, regional and local authorities in Italy have taken the lead in regulating and promoting cultural routes, particularly as tools for tourism policy development. This decentralization is also evident in the field of industrial heritage, where approaches differ widely across regions, reflecting diverse industrial histories and territorial contexts. Regional laws tend to overcome the purely conservative vision to embrace an integrated enhancement perspective, which considers industrial heritage as a resource for the tourist, cultural and economic development of the territory.

Several regions have adopted legislation aimed at enhancing industrial heritage, either through "organic laws", which regulate the matter comprehensively, or through "sectoral legislation", embedding provisions on industrial heritage within broader regulatory frameworks concerning cultural heritage or economic development.

One of the most notable examples is the Apulian Regional Law No. 1/2015, entitled "Enhancement of Industrial Archaeology Heritage". This regulation has pioneered the way for other Regions, defining industrial archaeology heritage as "the complex of intangible and material assets, no longer used for the production process, which constitute historical testimony of work and industrial culture". The Apulian law mainly promotes cataloguing activities of assets, their enhancement and protection, establishing a regulatory framework that has inspired other Regions. The operational tools provide for agreements with state administrations, local authorities and other entities for the purpose of reconnaissance, census, cataloguing and enhancement of industrial archaeology heritage. Similarly, Umbria's Regional Law No. 5/2013, also entitled "Enhancement of Industrial Archaeology Heritage," adopts an analogous approach, suggesting a coordinated legislative trend among some central-southern regions. The Basilicata Region has also

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developed its own bill for the enhancement of industrial heritage, with particular attention to the census of mills, ovens and cellars of the Lucanian region through the POFESR MenSALe Project[3]. In Northern Italy, Piedmont has developed a more fragmented but no less significant approach, embedding industrial heritage with broader cultural and landscape protection laws, such as Regional Law No. 32/2008. Lombardy has adopted a different systemic approach, integrating the protection of industrial heritage with broader policies of urban and territorial regeneration (Regional Law no. 18/2019), so as to promote significant census and documentation projects.

Sicily presents a particular case in the Italian regional legislative panorama on industrial heritage. Although it lacks a specific legislation on industrial heritage like other regions, its Regional Law No. 80/1977 laid the groundwork for cultural and environmental protection through the creation of a dedicated regional department. Moreover, Regional Law No. 1/1984 regulated industrial development consortia, providing a framework for managing active industrial sites. Sicily's industrial heritage holds extraordinary historical value, mainly linked to the sulphur extraction industry, which made the island a world leader in sulphur trade. Sicilian mines represent unique witnesses of industrial archaeology, as documented in the national (AIPAI) and European (ERIH) censuses.

*Empirical analysis*

The political and strategic fragmentation among regions is acknowledged by Francesco Antoniol, communication manager for the European Route of Industrial Heritage (ERIH), who notes that

> "There are only a couple of Italian regions where a legislative instrument exists that, in some way, supports industrial heritage. […] However, even in these regions, which deal with a wide array of other priorities, progress remains challenging."

On the contrary,

> "Public administrations should make available appropriate administrative tools or refine their existing rules and regulations, so that the instruments already in place at the European level can be effectively applied at the local level".

In this context, ERIH serves as a transnational platform that supports networking between member sites and civil society actors. It promotes meetings, the dissemination of local initiatives, the exchange of best practices

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[3] Available at:
https://europa.regione.basilicata.it/fesr/wp-content/uploads/2021/10/All_1a_PROGETTO-FESR_BEGIN-signed.pdf

in heritage valorisation, and the development of collaborative projects. ERIH also supports the Italian National Mining Day, held annually in May, by offering its patronage and endorsing a wide range of mining sites, including the Sicilian complexes of *Trabia-Tallarita* and *Floristella-Grottacalda*.

**Figure 1:** ERIH mining census. Sicilian mining sites
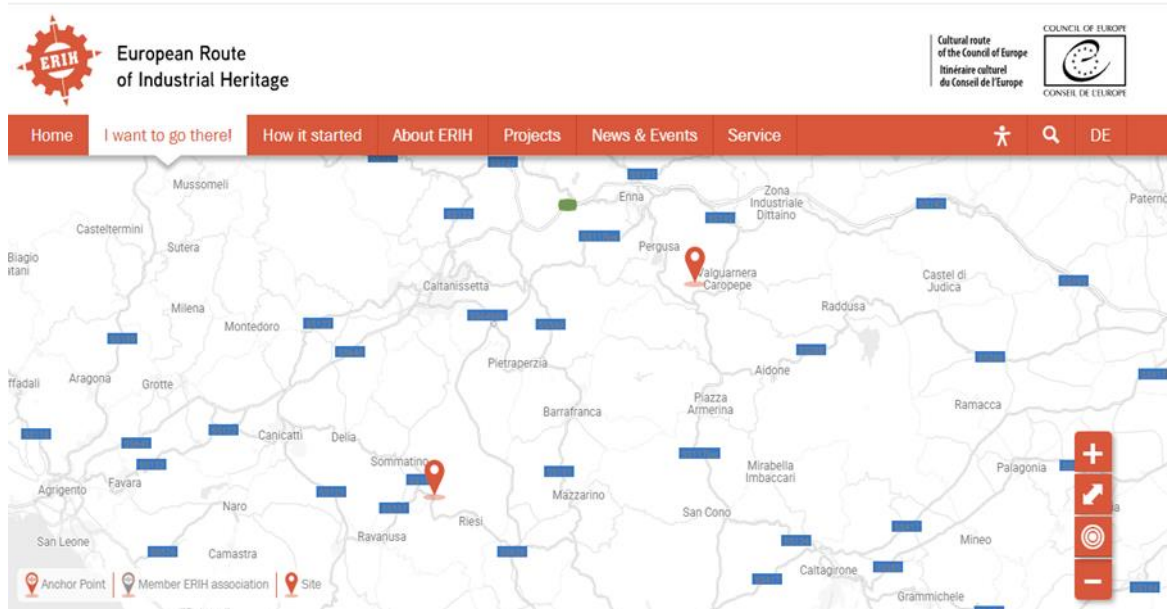


On the left, the mining complex of Trabia-Tallarita, that stretches between the municipality of Riesi (where there is the "Trabia") and Sommatino (to which the "Tallarita" belongs), both belonging to the province of Caltanissetta. On the right, the Floristella-Grottacalda Mining Park, in the municipality of Valguarnera-Caropepe (province of Enna).
Source: https://www.erih.net/i-want-to-go-there

The *Trabia-Tallarita* mining complex is part of the Regional Archaeological Park of Gela, since in 2000 it was acquired by the Sicilian Regional Department of Cultural Heritage, which in 2010 inaugurated the first part of the memorial museum. Spanning between Riesi and Sommatino in central Sicily, it stands as one of the richest mining sites in Europe. Notably, between the 19th and 20th centuries, it accounted for approximately 12% of global sulphur production, a figure that underscores its global economic and industrial relevance. It is also known for housing three of the four remaining "Tosi Engines", the fourth of which was famously installed on the *Titanic*. The strong sense of belonging makes local people cooperate in the management and valorisation of the site, and since public funding becomes scarce, they help in preserving the museum and its goods.

> (Park Officer 1): "Everyone here has had a relative or a father
> who worked in this mine, so we care deeply about this site. We

truly go above and beyond in our efforts to preserve and work
for it"

The *Floristella-Grottacalda* Mining Park is part of the Rocca di Cerere
Geopark and extends over 400 hectares, encompassing a vast sulphur basin
that includes, from east to west, the Gallizzi and Grottacalda mines. The added
value of the park lies in the presence of the impressive baronial palace,
formerly owned by the Pennisi family, who held ownership of the estate until
1967, year in which the mining concession was revoked from the baron and
the Sicilian Mining Authority was established. Restoration of the building was
funded through European Structural Funds and coordinated by the regional
superintendent.

> (Park Officer 2): "We managed to secure over one and a half
> million euros and, using European funding, we restored all the
> external structures. This included all three mine shafts...
> However, after completing the restoration of the shaft, we were
> unable to qualify in the rankings for several months. From that
> point on, management has been practically non-existent"

The park promotes not only heritage conservation but also educational,
cultural, and tourism-related initiatives.

Despite the historical significance of Sicily's industrial heritage,
particularly in relation to the sulphur mining industry, the regional legislative
framework remains fragmented, both in terms of cultural routes and industrial
heritage. This has resulted in what can be characterised as "heritage
conservation without valorisation".

*Between law and practice*

The absence of an explicit legal framework for cultural routes in Italy
can be attributed to the country's constitutional division of powers. This
institutional fragmentation has hindered the development of coordinated
policies and has led to reliance on temporary administrative acts and project-
based initiatives. Although the Code remains the central legislative tool for
cultural heritage, its silence on cultural routes as a distinct category limits their
formal recognition and constrains policy innovation in this area. Despite
symbolic efforts such as the 2016 directive and intermittent legislative
proposals, a comprehensive integration of Italian cultural routes into the
Council of Europe's Cultural Routes Programme has not been achieved.
Recent legislative initiatives, such as the 2025 draft law, represent a step
forward but remain limited in scope, focusing narrowly on pilgrimage-based
or linear paths and failing to account for more complex or networked
itineraries. Moreover, these approaches overlook the potential of cultural

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routes as instruments of transnational cooperation and intercultural dialogue, as defined by European standards.

The regionalization of cultural route and industrial heritage policy in Italy has led to a heterogeneous legal landscape, where legislative approaches vary significantly depending on regional priorities, political orientations, and historical-industrial identities. While this diversity reflects territorial specificities, it also exposes the lack of coordination and national strategic vision in this sector. Regional laws increasingly move beyond a strictly conservationist logic, embracing a development-oriented approach in which industrial heritage is framed as a driver of tourism, cultural identity, and local economic growth. However, the coexistence of comprehensive laws in some regions and fragmented or embedded provisions in others creates inconsistencies in the level of protection, funding, and visibility afforded to industrial heritage across the country. An important innovation in recent years has been the growing inclusion of participatory mechanisms within regional legislation. Many regions now implement tools for public consultation and stakeholder involvement, marking a shift from top-down governance to more inclusive, community-driven models. This participatory trend recognizes industrial heritage not only as a set of physical structures but also as a repository of collective memory and territorial identity.

Despite these positive developments, challenges remain. The current legislative landscape often fails to address networked or transregional heritage systems, and some regions, such as Sicily, despite having remarkable heritage assets, still lack a dedicated legal framework for industrial heritage enhancement. This undermines the potential for integrated protection, promotion, and international cooperation, especially within the framework of the Council of Europe's Cultural Routes Programme, where such assets could be strategically positioned.

## Discussion

The results reveal a critical tension in Sicily's industrial heritage landscape: despite possessing sites of outstanding historical and industrial significance, especially linked to the sulphur mining industry, the region struggles with fragmented legislation and weak institutional management. Unlike other Italian regions with clearer industrial archaeology laws, Sicily relies on broad, sectoral regulations – such as Regional Laws 80/1977 and 1/1984 – which offer an uneven and outdated framework, insufficient for the comprehensive protection and valorisation of industrial heritage. This regulatory fragmentation is emblematic of broader issues in Italian cultural governance, where the absence of clear jurisdictional boundaries and the lack of coordination between national, regional, and local levels hinder policy coherence and implementation (Rech, 2022).

Indeed, the analysis of Italian legislation, both at the national and regional levels, reveals a fragmented and constantly evolving legal framework. This issue has been widely debated in the academic literature (Amorosino, 2000; Areddu, 2020; Vitale, 2024), which has repeatedly stressed the need for greater normative harmonization. Nevertheless, this need remains largely unaddressed. At the national level, legislation retains the features of hard governance, providing a primarily normative framework, despite being unsatisfactory, aimed at safeguarding heritage. Conversely, at the local level, communities often compensate for regional institutional shortcomings through practices of soft governance (namely not through hierarchical impositions, but rather through flexibility, plurality, and horizontal structuring), thus mobilizing resources, social capital, volunteering, and territorial identity (Iaione *at al.*, 2022). While these bottom-up experiences demonstrate the capacity of communities to generate heritage value, they also highlight the fragility of a system that lacks stable multi-level coordination. The result is a hybrid form of governance, capable of producing isolated cases of best practices but lacking a systemic framework for long-term development.

The absence of institutional coordination further fuels mechanisms of path dependence (David, 2007). Territories equipped with advanced legislative tools (such as Umbria and Apulia) progressively consolidate their competitive advantage, whereas regions without specific legislation (such as Sicily) face increasing difficulties in closing the gap. This situation also affects the ability to access and integrate into European networks, where the lack of clear policies hampers structured dialogue with international partners and complicates the prospects for shared management of common heritage. Consequently, the phenomenon of a "multi-speed Italy" becomes more pronounced, with regional differences translating into divergent trajectories in the valorisation of cultural heritage. Regions that have adopted specific legislative frameworks and cultural policies not only benefit from greater operational resources but also from community empowerment mechanisms. In such contexts, the dialogue with heritage communities is more robust, both because they recognize culture as a space of aggregation and identity construction (Baldin, 2018) and because associations and local groups serve as crucial intermediaries for the protection and management of heritage (Venturi, Zandonai, 2014).

In the Sicilian cases, this dynamic is emblematic. The mining sites of *Trabia-Tallarita* and the *Floristella-Grottacalda Park* survive thanks to collective memory and the activity of the local community, which has assumed a custodial role in the absence of adequate institutional support. However, such a bottom-up governance model, while virtuous, risks being non-scalable if not embedded within a structured institutional and financial framework. Although significant public investments (top-down model) have produced

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substantial material interventions, they have proven to lack managerial continuity. In this sense, while community activity yields efficient and positive results, that of local administrations, which should support the site's long-term operations, is extremely limited. From a theoretical standpoint, this highlights the need for a hybrid approach: on one hand, institutions capable of ensuring regulatory frameworks, resources, and strategic planning; on the other, local communities contributing knowledge, values, and caretaking practices.

To sum up, the case of Sicily reveals the challenges inherent in multi-level governance systems lacking central coordination. Institutional fragmentation often prevents the formulation of coherent, long-term policies, thereby widening regional disparities. At the same time, bottom-up initiatives prove essential for the resilience of heritage sites, yet they cannot replace the foundation provided by strong institutional support. Effectively, valorising industrial heritage and cultural routes requires a model of integrated cultural governance, one that can bridge the gap between conservation and promotion, while fostering collaboration among institutions, local communities, and transnational networks, such as ERIH.

## Conclusions

The case of Sicily illustrates the complex interplay between historical significance, legislative fragmentation, and community-driven heritage valorisation. The island preserves an extraordinary array of mining and refinery remains, holding inestimable cultural and archaeological value. Yet, its potential is constrained by the absence of a coherent and goal-oriented legislative framework. Existing national and regional regulations are fragmented and sectoral, with no provisions specifically addressing industrial heritage or cultural routes. As a consequence, both regional administrations and local actors face significant constraints in managing and developing these assets. This regulatory gap not only hampers formal recognition and coordinated governance but also prevents Sicily from fully integrating its heritage into European programmes such as ERIH and the Council of Europe's Cultural Routes.

Empirical insights from the *Trabia-Tallarita* and *Floristella-Grottacalda* mining sites highlight how, in the absence of institutional support, local communities assume a custodial role. Through social capital, volunteering, and strong territorial identity, they safeguard and transmit collective memory while ensuring public access. Yet, these bottom-up initiatives, while commendable, are often confined to isolated interventions. They lack replicability, scalability, and the long-term planning necessary for sustainable development, revealing a structural tension: grassroots action alone cannot substitute for robust governance, consistent funding, and policy coherence.

Addressing these challenges calls for the development of a comprehensive national strategy that conceptualizes cultural routes not as simple linear paths, but as complex, multidimensional, and cross-border heritage systems. Such a framework should clearly define the roles of national and regional administrations, establish coordination mechanisms, provide stable institutional and financial support, and, finally, lead to harmonized governance mechanisms among different regions. Capacity-building for policymakers, cultural managers, and local actors is crucial to align local projects with European standards. Equally essential are long-term funding schemes integrating national, regional, and EU resources, alongside monitoring and evaluation systems that can assess outcomes, disseminate best practices, and enhance resilience. However, these reforms face potential limitations, specifically regional disparities in administrative capacity, divergent political priorities, and the challenge of reconciling national and European governance frameworks.

Ultimately, the Sicilian case illustrates that the effective valorisation of industrial heritage depends on a harmonized and hybrid governance model, where robust institutional frameworks and active community engagement converge to transform fragmented initiatives into sustainable, interconnected cultural systems. The purpose of such harmonized governance is to provide all regions with shared objectives and common instruments, ensuring that the national cultural heritage – conceived as a collective good – can be coherently developed and promoted.

**Limitations and Future Research**

Although the study provides a clear picture of the Sicilian context in the valorisation of industrial heritage through cultural routes, it lacks the empirical perspective of the regional administration. As a result, the analysis is limited by the absence of this institutional viewpoint, which represents a key factor in the governance and promotion of cultural heritage. This gap reduces the possibility of fully capturing the dynamics between regional policies, local communities, and transnational networks, and suggests the need for further research that integrates the voices of regional policymakers.

Moreover, a comparative analysis between EU Member States can offer valuable insights for improving cultural routes and industrial heritage enhancement. Comparing countries reveals the significant differences in strategic priorities, funding mechanisms, and institutional frameworks, which can inform policy adjustments and best practices.

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# Geopolitical Aspects of the EU Enlargement Process: Macedonian and Ukrainian Case

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## Abstract

This paper compares the integration processes of North Macedonia and Ukraine, which have recently opened EU accession negotiations. The significant disparity in the pace of their integration processes - remarkably slow in the case of North Macedonia and exceptionally fast in the case of Ukraine - serves to examine whether EU enlargement decisions are shaped more by the institutional criteria or by geopolitical interests of member states. Using a comparative approach, the study analyzes the European policies and relations with both countries and the EU role in addressing their internal and external disputes. The study aims to demonstrate how EU enlargement is shaped by EU standards and geopolitical interests, interpreting the findings through intergovernmental and realist perspectives that emphasize state-driven decision-making and security imperatives. The results reveal that North Macedonia's accession was delayed due to non-criteria political disputes, while Ukraine's accession process was accelerated for security reasons, demonstrating how geopolitical considerations can outweigh normative standards in EU enlargement.

**Introduction**

The enlargement of the European Union has long been one of the most important and transformative processes on the continent, reshaping political, economic and security landscapes across Europe. Traditionally the EU has presented enlargement as a rules-based process guided by clearly defined criteria, such as democracy, the rule of law and respect for human rights. However, recent developments suggest that geopolitical considerations are increasingly influential in determining the pace and direction of enlargement. Although European accession policies have been widely studied, much of the literature treats the enlargement process in general terms, while candidate countries are most often analyzed separately rather than in a comparative framework. Numerous works examine the Eastern enlargement, the accession process of Western Balkan countries, and, more recentl,y the Ukrainian case, but there is still a lack of comparative analyses that explore the geopolitical dimension of EU enlargement across different enlargement packages. By examining the interplay between formal accession criteria and geopolitical aspects of national interests, this study aims to deepen the understanding of how the EU balances normative principles with strategic calculations in its enlargement policy, and to fill the above-mentioned gap by conducting a comparative analysis that contributes to the theoretical debates between intergovernmentalism and realism.

The study is structured around two central research questions. The first is *whether the individual EU members' interests exert greater influence on the accession process than the Union's common policies*; the second is *which geopolitical factor has the greatest impact on the European integration process*? To address these questions, the study provides a comparative analysis of enlargement policies concerning two candidate countries: North Macedonia (hereafter Macedonia)[1] and Ukraine.

While both countries share the status of EU candidates, they differ significantly in their geopolitical context, the enlargement package they belong to and the duration of their accession process. This divergence is pivotal to the analysis, as Macedonia has been involved in the process for two decades, while Ukraine progressed from candidate status to accession negotiations in less than two years. This contrast illustrates how, alongside compliance with EU standards and conditions, the geopolitical context plays a crucial role in determining progress.

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[1] In the analysis which covers the period from 1991 to 2025, the author uses the name "Macedonia" corresponding the country's official name from 1991 to 2019. The same term is maintained for references to the period after February 2019, when Constitutional Amendment 33 to the Preamble, introduced the term "North" to officially rename the country.

By comparing Macedonia (a case defined by prolonged conditionality and intergovernmental blockades) with Ukraine (a case of accelerated accession under geopolitical urgency), this study addresses a critical gap in the literature. The comparative approach also provides valuable insights into the factors shaping the EU's approach to accession negotiations. It contributes to ongoing debates on intergovernmentalism in EU processes, as well as the realist school of thought in international relations. More broadly, the analysis seeks to answer when and why the EU acts as a normative, rules-based actor, and when it behaves as a geopolitical, interest-driven actor. In doing so, the study not only enriches theoretical debates but also offers relevant policy implications for the credibility and future direction of EU enlargement.

**Methods**

The research applies a comparative case study approach, focusing on the EU accession process of Macedonia and Ukraine. The selection of these cases reflects their shared status as candidate countries, while their contrasting accession trajectories allow for a deeper analysis of the role of geopolitical factors in enlargement policy. The analysis covers the period from the early 1990s, when both countries gained independence, to 2025, by which time Ukraine and Macedonia are both engaged in active accession process. The sources were selected to ensure comprehensive coverage of both legal and political dimensions.

The first part, entitled *Macedonian and Ukrainian relations with EU* provides a detailed chronological overview of each country's relations with the Union, with the aim of comparing the dynamics of their progress, from signing of the first agreements to the present day. This section draws primarily on legal agreements, such as Stabilization and Accession Agreements, Association Agreements, and Accession Partnership documents.

The second part, *Geopolitical aspects of EU enlargements*, analyzes the geopolitical dimensions of the EU accession process in the cases of Ukraine and Macedonia. This section relies on secondary sources, including academic books, peer – reviewed journal articles and policy analyses addressing EU enlargement, intergovernmental decision-making and geopolitics.

The third part, *Comparative analysis of the Macedonian and Ukrainian case*, employs a wide range of sources, including primary documents such as European Commission reports, Council conclusions, and enlargement strategy papers, as well as international bilateral agreement, national policy documents from both countries, and secondary academic analysis. This comparative analysis provides a comprehensive picture of the difficulties and advantages faced by both countries, situating them within the

framework of intergovernmental and realist perspectives on EU enlargement, its standards and its geopolitical interests.

The findings are interpreted through the lens of theory of intergovernmentalism within EU integration studies (which follows classical approach that states are the main actors in decision-making process), as well as through realist perspectives in international relations (which assert that state insecurity is the central problem in international relations and that states must ensure their own security, as no other actor can be reliably depended upon). This dual-theoretical framework helps to uncover whether the EU's enlargement policy is primarily driven by strategic interests of individual member states or by EU's normative commitments to democratic governance and rule of law.

**Macedonian and Ukrainian relations with the EU**

To address the first study question: *whether the individual EU members' interests exert greater influence on the accession process than the Union's common policies*, this section analyses the European policies and agreements signed with both states, emphasizing the EU's role and interest in resolving the internal and external disputes that Macedonia and Ukraine have encountered and continue to face.

Both Macedonia and Ukraine declared independence and became sovereign states in the early 1990s. Unlike some federal republics of the Soviet Union and the Yugoslav Federation, they went through this process without armed conflict, but they faced certain subsequent challenges.

Macedonia was the only one of the six Yugoslav republics not involved in the armed conflict with the Yugoslav army. Nevertheless, less than a year after declaring independence, the country encountered its first major international obstacles, primarily related to its recognition and the dispute over its constitutional name. In the European Council Lisbon Declaration of June 27, 1992 and its annex related to declaration on former Yugoslavia, the European Council (reiterated the position taken by the Community and its Member States in Guimaraes on the request of the former Yugoslav Republic of Macedonia to be recognized as an independent State), expressed its readiness to recognize that republic within its existing borders according to their Declaration on December 16, 1991, but only under a name that did not include the term "Macedonia" (The European Council, 1992). Furthermore, the Council considered the borders of this republic as inviolable and guaranteed in accordance with the principles of the UN Charter and the Charter of Paris. This declaration, along with the two constitutional amendments on Articles 3 and 49 (1992), the change of the national flag (1995) and the use of the abbreviation FYROM (Former Yugoslav Republic

of Macedonia) in international organizations, were all made under Greek pressure and with European support.

On April 8, 1993, the Republic of Macedonia became a full-fledged member of the United Nations and on November 9, 1995, it joined the Council of Europe. Two years later, in April 1997, the Cooperation and Transport Agreement (CTA) was signed in Luxembourg, officially establishing political and economic ties between the Republic of Macedonia and the European Union (EU). Following the CTA's entry into force in January 1998, the Macedonian Parliament declared EU membership as the country's strategic goal. In the following year, 1999, the EU launched the Stabilization and Association Process (SAP)[2], and Macedonia was the first country in the region to sign the Stabilization and Association Agreement (SAA), in April 2001. In August, the Ohrid Framework Agreement (OFA) was also signed, effectively ending the armed conflict that had begun in February. Although OFA has a national character, it was signed with international participation and assistance. The representatives from the USA (James Pardew) and the representative from the EU (Francois Leotard) signed the agreement alongside the leaders of the two largest Macedonian and the two largest Albanian parties in Macedonia. The EU was also tasked with coordinating and implementing the agreement, in collaboration with the Council of Europe, the European Commission, the OSCE and the UNHCR. The points of the agreement comprise an agreed framework for securing the future of Macedonia's democracy and for fostering closer integration with the Euro-Atlantic community (OSCE, 2001). In fact, the implementation of OFA became crucial criterion in evaluating Macedonia's progress under the SAA, which aims to support the country in strengthening democracy, ensuring economic stability (through legal alignment with EU standards and transition to market economy), and promoting the rule of law and protection of fundamental rights (Eur-Lex, 2001).

Recognizing Macedonia's progress in legislative alignment and fulfillment of OFA and SAA obligations, the European Council granted the country's candidate status on November 9, 2005, one year after its application for EU membership. Four years later, in October 2009, the European Commission recommended opening accession negotiations, marking the transition to the second phase of the SAA. On February 10, 2010, the European Parliament adopted a resolution urging the Council to support the Commission's recommendation at its March 2010 Summit. However, the decision to initiate negotiations was delayed for a decade, primarily due to the unresolved name dispute with Greece.

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[2] SAP was designed to foster regional cooperation and provide financial assistance through the CARDS program (2000-2006), later replaced by Instrument for Pre-Accession Assistance (IPA I: 2007-2013); IPA II: 2014-2020).

The Greek veto became a significant roadblock in multiple EU Council Summits (between 2009 and 2018), preventing Macedonia from moving forward in its EU accession talks. The dispute was ultimately resolved with the Prespa Agreement, signed in 2018 (between Greece and Macedonia, underthe   auspices of the United Nations)[3]. It is illogical that the Prespa Agreement on the name change was signed in June, while the referendum on the agreement, organized by the Macedonian government, was held on September 30. Just before the referendum, the EU High Representative for Foreign Affairs (Federica Mogherini) and EU Commissioner for Enlargement (Johannes Hahn) actively participated in the negotiations, providing support and encouraging the public to vote in the referendum. Despite a voter turnout of 37%, below the required 50% threshold, the results of the referendum were validated. The agreement officially resolved the name dispute, led to a constitutional amendment changing the country's name to North Macedonia, but new challenges emerged. In October 2019, France and the Netherlands blocked the opening of EU accession negotiations with Macedonia and Albania, despite the positive recommendations of the European Commission. The European Parliament considered this delay a strategic mistake that harmed the EU's credibility and risked pushing the two countries towards foreign actors with differing values (Parliament, 2019). It called for stronger democracy support in the Western Balkans and urged EU leaders to act responsibly and approve negotiations, stressing that decisions should be based on merit rather than political agendas (not judged by domestic political agendas in other countries). In 2020, the EU finally agreed to open negotiations. But this time, Bulgaria blocked the Macedonian accession process in November 2020, justifying its decision by stating that there had been no significant progress in fulfilling the Treaty of friendship, good-neighbourliness and cooperation between Bulgaria and Macedonia signed in 2017. The conditions set by Bulgaria included adherence to the language formula established in 1999 and reaffirmed in 2017, a timeline for implementing the agreement and an explicit text in the roadmap of implementation saying that any claims for a Macedonian minority in Bulgaria will not be supported in any form. Citing disputes over historical and linguistic issues, Bulgaria maintained its veto in May and October 2021. As a response, the message from the Council's presidency was that enlargement should not be held hostage by bilateral issues. Finaly on 22 June 2022, Bulgaria approved the French proposal regarding the Macedonian issue, which imposed four conditions for Macedonia's future EU accession: effective implementation of

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[3] Amendment XXXIII stipulates that the words "Republic of Macedonia" are replaced with "Republic of North Macedonia", and the word "Macedonia" is replaced with "North Macedonia", except in Article 36 of the Constitution.

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the Treaty of friendship, good-neighbourliness and cooperation; guarantees for the rights of Bulgarians in Macedonia through their inclusion in the Constitution as a constitutive people; assurance that nothing in Macedonia's accession process would be interpreted as Bulgaria's recognition of the Macedonian language; and European guarantees that Bulgaria's conditions would be fulfilled.

Unlike Macedonia, Ukraine has followed a different path in establishing its relationship with the European Union. Based on Article 72 of the Soviet Union Constitution (Supreme Soviet of the USSR, 1982) it was stipulated that each federal state reserved the right to secede from the USSR. Exercising this right, Ukraine declared its independence on August 24, 1991. A few months later with the signing of Alma-Ata Protocol on December 21, 1991, nearly all ex-Soviet republics became members of the Commonwealth of Independent States (regional intergovernmental organization in Eurasia) and six months later, on May 15, 1992, almost all CIS members signed the Collective Security Treaty, a defensive military alliance (Istituto della Enciclopedia Italiana, 2014). Two years later, Ukraine signed the Partnership and Cooperation Agreement with the EU, which entered into force in 1998. This agreement laid the foundation for bilateral relations and expanded the existing TACIS program (Technical Assistance to the Commonwealth of Independent States). The program objectives included establishing a framework for political, economic, and trade relations, focusing on democratic and economic reforms and providing a basis for technical assistance. A few years later, in 1997, Ukraine, together with Georgia, Azerbaijan and Moldova established the Consultative Group, which later led to the formation of Organization for Democracy and Economic Development-GUAM in 2006. This initiative was based on the idea of a common path towards the structures of Euro-Atlantic cooperation. In 2003, the EU launched the *European Neighbourhood Policy* (ENP) to foster stability, security and prosperity, and it aimed to strengthen relations with neighbouring countries. Ukraine joined the ENP in 2004. The same year the *Orange Revolution*[4] occurred reflecting a social struggle between aligning with European democratic norms and remaining within the post-Soviet political sphere dominated by Russian influence. The involvement of EU High Representative Javier Solana, along with other international representatives, helped find a political resolution and avoid violence (Pifer, 2007). With the aim to help Ukraine and bring it closer to the EU standards, EU in 2007 set out political and economic reforms in the framework of the Council of Europe's Action Plans. MEDA, TACIS and other

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[4] The cause of the *Orange Revolution* was the contested 2004 presidential election between pro-Russian candidate Yanukovich and pro-western reformist Yushchenko. The protest adopted the color orange as a symbol of the movement representing Yushchenko's campaign and led to a landmark decision for a re-run election, resulting in Yushchenko victory in 2005.

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programmes were consolidated into the *European Neighbourhood and Partnership Instrument* (ENPI), which prioritized sustainable development and the approximation of EU policies and standards in neighbouring countries. In 2009, the EU introduced the *Eastern Partnership Initiative*, facilitating accelerated political association and deeper economic integration with its Eastern neighbours. The Association agreement was initiated in 2012 and was planned to be signed during the EU Eastern Partnership Summit held in Vilnius the following November. On this occasion, Association Agreements were signed with Georgia and Moldova, but were canceled with Ukraine. In fact, the proposal for Ukraine's accession to the EU was made by Romano Prodi in 2013, a year before the Russian annexation of Crimea and previously in 2004, when he was acting as President of the European Commission and engineered the "big bang", but unfortunately, at that time, the EU's agenda was absorbed by internal problems caused by the euro crisis (Romano Prodi, 2013)[5]. The signing of the Agreement with Ukraine took place in 2014, after the outbreak of the protests known as *Euromaidan*[6] and the removal of President Viktor Yanukovych. This act was considered by Russia as an act of sabotage against Moscow's interests and influence (Kuchins, 2022), and prompted Russia to organize a referendum in Crimea just a few days before the agreement was signed on March 16, 2014. Two days later, Russian President Putin requested the Federal Assembly to review the constitutional law for the inclusion of two new subjects in the federation - Crimea and Sevastopol - and to prepare an agreement for their entry into the Russian Federation. On March 27, the United Nations General Assembly adopted measures underscoring that the referendum had no validity and called for the non-recognition of any alteration of the status of Crimea and the city of Sevastopol. That same year, the European Parliament adopted a resolution confirming that Moldova, Georgia, Ukraine, and any other European country with European aspirations could submit their application for joining the EU. The new Ukrainian government signed the Political EU Accession Agreement on March 21, 2014, followed by the Association Agreement signed by President Poroshenko on June 27. Since July 2014, trilateral consultations

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[5] "It is of economic, political, and geostrategic importance to Europe and the U.S. that Ukraine comes under the European umbrella of shared values and free trade. Engaging Ukraine, a reliable NATO partner, would also be beneficial for the West in terms of security interests. This is a serious geopolitical opportunity for Europe and the US. We should make the most of it. Ukraine is important to Europe as a source of economic growth and energy security, as well as a bridge to Russia", resumes Romano Prodi

[6] The Euromaidan crisis began with thousands of people gathered in independence Square Maidan Nezalezhnosti in Kiev to protest the Ukrainian government's decision under Prime Minister, Mykola Azarov to suspend the Association Agreement with the Europea Union and the President Viktor Yanukovych's refusal to sign the agreement at Vilnius Summit.

between the EU, Ukraine, and Russia have addressed the implementation of the EU-Ukraine Association Agreement, including the Deep and Comprehensive Free Trade Area. This agreement promotes deeper political ties (gradual approximation of Ukrainian legislation, rules and procedures, including EU standards), stronger economic links (it reduces export tariffs for European firms and makes customs procedures more efficient) and respect for common values. The EU declared that it remains committed and open to achieving practical solutions to Russia's concerns regarding the implementation of the EU-Ukraine DCFTA[7], while all parties agreed on the importance of trade liberalisation and WTO commitments.

Following the *Euromaidan* protest, pro-Russian protests began in Ukraine's region of Donbas, where the separatist groups declared Donetsk and Luhansk Oblasts as independent People's Republics. Two protocols known as Minsk I and Minsk II were signed, with the aim of finding a permanent solution. The first protocol was signed in September 2014, underthe mediation of the OSCE and supported by the EU. The second protocol was signed in February 2015, with the participation of France and Germany, but not as formal representatives of the EU[8]. Despite these efforts, both agreements ultimately failed to end the conflict, which continued to escalate. After the *Euromaidan* protest and the signing of the Association Agreement, EU assistance through the ENI rose to more than €200 million annually[9]. In fact, the EU has provided exceptional support to Ukraine, at a level second to that for pre-accession countries (Wolczuk, 2023).

After Ukraine withdrew from the Commonwealth of Independent States in July 2018 the NATO-Ukraine Commission Summit in Brussels reaffirmed NATO's commitment to a stable and secure Ukraine, as well as Ukraine's commitment to Euro-Atlantic integration. With the duty to ensure the implementation of the strategic path for Ukraine's full membership in the European Union and the Atlantic Treaty in 2019, articles 85, 102, and 116 of the Ukrainian Constitution were supplemented with the duty to implement the strategic course of the state for gaining full-fledged membership of Ukraine in the European Union and the Atlantic Treaty Organization (Verkhovna Rada of Ukraine, 1996). A few years later, Russia signed a decree recognizing the Donetsk and Luhansk People's Republics, based on a resolution adopted by the Duma on February 15, 2022. Shortly after, Russia announced its intention

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[7]As part of broader peace efforts respecting Ukraine's sovereignty, the DCFTA's provisional application was postponed until January 1, 2016

[8] "Most EU member states turned a blind eye to the issue of Crimea and hid behind Germany and France and agreed to let the Germans and the French decide about Donbas first, then we will think about what to do with Crimea, and in the meantime, we will keep trading with Russia". Cit in (Raik, 2024)

[9] Between 1991 and 2015, the EU offered Ukraine assistance worth €12.1 billion

to send troops to the region, citing Article 51 (Chapter VII: Action with Respect to Threats to the Peace, Breaches of the Peace, and Acts of Aggression) of the UN Charter (United Nations, 1945) and the treaties of friendship and mutual assistance with the two republics (ratified by the Federal Assembly on February 22). Russia subsequently launched a "special military operation" in Ukraine. A few days later, on February 28, Ukraine submitted its application for EU membership. Although the French President had said it could be decades before Ukraine joins, on June 17, the Commission delivered its Opinion and few days later, on June 23, the European Council endorsed the European Commission Opinion and granted the candidate status to Ukraine. In December 2023 the European Council decided to open accession negotiations.

Since the Russian invasion, the EU has supported Ukraine from the outset and has adopted 15 sanctions packages against Russia (government and financial, business, defense, technology and media sectors) to weaken its war capabilities. These include bans on seaborne crude oil and petroleum products (covering 90% of EU oil imports from Russia), restrictions on liquefied natural gas (LNG) transshipment, coal imports and exports of oil-refining technologies. While gas imports were not banned, the EU imposed strict limits on oil transport services and cracked down on sanction evasion. By early 2025, the EU and its members had provided nearly €134 billion in support to Ukraine, including €67.3 billion in financial, humanitarian, and emergency aid, €48.3 billion in military support and €17 billion for Ukrainian refugees in the EU (Archick, 2025). However, this robust support has not been unanimous, as some member states have resisted certain measures. From the very beginning Hungary has been the strongest opponent of the EU's financial support for Ukraine, sanctions on Russia, and even Ukraine's integration into the European Union. In fact, since the full-scale invasion of Ukraine in 2022, no EU geopolitical decision related to the war in Ukraine's defense against Russia has escaped Hungary's obstruction or attempts at political leverage (Landsbergis, 2025). In December 2023 the Hungarian prime minister suggested that the EU should sign a "strategic partnership" with Ukraine for 5-10 years, and only then resume the discussion on its accession to the EU. As a condition, he requested that the language rights of ethnic Hungarians living in Ukraine be restored; otherwise, Hungary would not support Ukraine on any international relations issue. In his statement from March 2025, he declared that Ukraine's membership in the EU will have negative consequences for Hungarian interests.

**Geopolitical aspects of EU enlargements**

To address the second study question: *which specific geopolitical motives are most influential in a decision-making process*, this section

analyzes the geopolitical dimensions of the EU accession process in the cases of Macedonia and Ukraine.

Following Croatia's accession, the election of Jean-Claude Juncker as President of the European Commission in 2014, marked a significant shift in EU enlargement policy. In his *Political Guidelines for the next European Commission* the enlargement process was notably absent, signalling a period of reduced institutional focus on EU expansion. It was only in 2017 that the Commission adopted a strategy *A credible enlargement perspective for an enhanced EU engagement with Western Balkans*, reaffirming the region's European future as a strategic investment in a stable, strong and united Europe founded on common values (European Commission, 2018). In March 2020, after Juncker's presidency, the Commission adopted a revised accession methodology, aimed at increasing credibility, predictability, dynamism and stronger political steer. Prior to the official start (in December 2019) of the new European Commission led by President Ursula von der Leyen, the Council meeting on October 15, revealed continued divisions among the member states. France, the Netherlands, Denmark and Spain voted against opening negotiations with Albania, which also affected Macedonia. Although the objections targeted Albania, the EU opted to treat Albania and Macedonia together, highlighting the interconnection of bilateral and regional dynamics. Finally, in March 2020, the Council approved *Strengthening the accession process - A credible European perspective for the Western Balkans,* reorganizing the 36 negotiation chapters into six clusters and emphasizing the four principles of credibility, predictability, dynamism and stronger political steer. This approach underscored the EU's attempt to reconcile internal political divergences with the strategic imperative of maintaining enlargement momentum. Nevertheless, the Macedonian accession trajectory faced further delays due to Bulgaria's veto, grounded in historical and linguistic disputes. This delay highlighted the continuing influence of individual member states on enlargement, even mid broader EU reforms. The breakthrough occurred during the French presidency and coincided with the granting of candidate status to Ukraine, which was invaded by Russia in February 2022. The ongoing war further reinforced the geopolitical necessity of curbing Russian influence in the Western Balkans, underscoring the urgency of EU integration of the region (Radic, 2022). Considering the seriousness of the situation, during a visit to Skopje in March 2022, High Representative/Vice-President Josep Borrell emphasized that the Western Balkans are a strategic priority for the EU and that their alignment with EU positions on Russia demonstrates their commitment to shared European values. He described the current situation as an "awakening moment for Europe, a moment to reinvigorate the enlargement process in order to anchor the Western Balkans firmly to the EU" (Delegation of the European Union to North Macedonia, 2022).

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This geopolitical urgency, which accelerated Ukraine's EU accession process and incentivized France to resolve the Macedonian - Bulgarian dispute during its EU presidency, illustrates how external security threats can reshape internal EU decision-making. French President Macron, who had previously blocked the accession talks with Albania and Macedonia in 2019, called for new members to be admitted "as swiftly as possible". Similarly, German Chancellor Scholz framed enlargement as essential for lasting peace in response to Russia's war of aggression (Buras, 2023). That same year, the Austrian Foreign Minister Alexander Schallenberg initiated the informal "Friends of the Western Balkans" group comprising of Greece, Italy, Croatia, Slovakia, Slovenia and the Czech Republic. The group's objective was to provide the Western Balkan states with a realistic and credible accession prospect while advancing concrete progress toward EU membership.

The official return of enlargement to the EU agenda occurred in November 2023, when the European Commission adopted the *Growth Plan for Western Balkans,* signalling its renewed centrality on the EU agenda. The Plan aims to integrate the region into the EU's single market, strengthen regional economic cooperation, deepen EU-related reforms and increase pre-accession funding to accelerate socio-economic convergence. Subsequently, in October 2024, the Commission approved the reform agendas of Albania, Kosovo, Montenegro, Macedonia, and Serbia, and ensured support through instruments such as the *Plan for the Western Balkans,* and the *Ukraine Facility* intended for Ukraine. Furthermore, the appointment of a Commissioner for Enlargement and another for the Mediterranean, along with the new Pact for the Mediterranean, signaled a strategic effort to strengthen partnerships, investment and stability across the region (Leyen, 2024). In addition to this, in her *Political guidelines for 2025-2029*, Ursula von der Leyen framed enlargement as a moral, political, and geostrategic imperative, emphasizing its role in enhancing the EU's global influence, resilience and security. This framing underscored the EU leadership's recognition that enlargement is not only a procedural process but also a tool for advancing strategic interest, setting the stage for a differentiated approach in cases of heightened geopolitical urgency, which explains why Ukraine's accelerated accession trajectory reflects a strategic shift in the EU's enlargement approach, driven primarily by security considerations. This "open door" policy prioritized geopolitical containment of Russian influence over the traditional norm-based enlargement frameworks. Nevertheless, while Ukraine remains the EU's strategic priority, resistance from Eurosceptic member states, particularly Hungary and Slovakia, has pressured EU institutions to reinforce reforms in sensitive areas, particularly minority rights. Orban's government, which has avoided providing military aid and has maintained close ties with Russia, delayed EU funding, opposed the EU's seven-year budget proposal (which

diverts funds from vital cohesion and agricultural subsidies to Ukraine) and argued that Ukraine is unprepared for EU membership due to war-related territorial disputes, economic instability and institutional weaknesses. It warned that Ukraine's accession would threaten Hungary's national interests and security and impose burdens on existing member states, emphasizing that accession should follow merit-based criteria rather than political expedience.

**Comparative analysis of the Macedonian and Ukrainian cases**

Considering all the arguments presented thus far, this section provides a comparative analysis of Macedonia and Ukraine within the framework of intergovernmental and realist perspectives, focusing on the counties' accession trajectories.

The results of the analysis elaborated in the two previous sections demonstrate that Macedonia's progress in the EU accession process depends more on the interests of individual member states than on the general accession criteria. The Macedonian accession process was repeatedly obstructed by vetoes, mainly from two member states, each requiring constitutional changes. Greece blocked progress for decades over the name dispute, while Bulgaria imposed conditions regarding language and historical interpretation. This indicates that the EU deferred to individual member state preferences and delegated dispute resolution to the UN in the first case (the name dispute) and adopted a temporary solution in the second (dispute with Bulgaria), largely prompted by the new geopolitical context created by the war in Ukraine.

In contrast, EU policy toward Ukraine was largely unified throughout, influenced by the ongoing military conflict, except for Hungary, which has made demands not only for Ukraine but also for EU itself. The Hungarian request from March 2025 included 12 demands, among them: "a Union, but without Ukraine", "protecting Christian heritage" and "peace in Europe".

Both examples demonstrate that the veto power allows individual states to assert their preferences and EU enlargement, in practice, reflects intergovernmental dynamics, where states remain the primary actors in decision-making, while supranational institutions (such as the European Commission) exert limited independent influence.

At the same time, the Ukrainian case reveals how an external security threat (the geopolitical urgency created by Russia's invasion) led the EU to prioritize geopolitical considerations in accession decisions. Although neither Russia nor Ukraine was an EU member at the time, Ukraine was swiftly granted candidate status, and within a year and a half began accession negotiations – a process that took Macedonia 17 years. This raises the question: could Ukraine have implemented all the necessary reforms in such a short period? In fact, even though Hungary considered Ukraine's progress insufficient, the European Commission's draft report positively noted

Ukraine's efforts on minority rights. Thus, the Commission positively assessed the changes to minority legislation approved in December 2023, and Brussels even went so far as to reaffirm its support for the Ukrainian law, even without waiting for its analysis by the Venice Commission (Sydorenko, 2024). These actions illustrate how the EU applies double standards toward candidate states, and prompt two questions. First, did the EU respond swiftly to assist Ukraine, or to preserve broader security, including its own national interests? Second, was Ukraine a special case due to its geopolitical significance or because of Europe's dependence on strategic resources? The answer to these questions emerges naturally from the second research question: *which geopolitical motives most strongly influence the EU enlargement process,* and the contrasting experiences of Macedonia and Ukraine provide concrete evidence.

In the case of Macedonia, the Stabilization and Association Process was designed to stabilize the region and facilitate integration into the EU. It provided a framework for political dialogue, encouraged international and economic cooperation, supported legal harmonization with EU standards and aimed to establish a free trade area and improve regional cooperation. Within this framework, the EU emphasized not only institutional and economic reform, but also the consolidation of domestic stability, which made the implementation of the Ohrid Framework agreement (with great attention to minority rights and pthe rinciple of multiculturalism) a central benchmark for Macedonia's progress. In Ukraine's case, EU agreements were more focused on trade and economic cooperation, while the Minsk II Protocol never acquired the same centrality in Ukraine's integration process, as the Ohrid Framework Agreement did in the Macedonian case. In fact, for the EU, it was sufficient to prevent ethnic escalation in Macedonia, while in Ukraine, the priority was to guarantee the economic security and prosperity through closer relations. Although the events of 2014 - the annexation of Crimea by Russia and the armed conflicts in the Donbas region - were harbingers to the Russian invasion, the EU responded only after the invasion occurred, not by formulating a specific solution that would become a condition for progress in the accession process, as in the Macedonian case, but rather by granting candidate status to Ukraine and opening accession negotiations within a record timeframe. Considering these developments, Ukraine represents a unique case in which the acceleration of its accession process was driven primarily by security imperatives. By contrast, what makes Macedonia unique is not the EU's preventive role in averting an ethnic conflict, but the fact that its accession progress was obstructed for reasons beyond the formal accession criteria.

In fact, the EU approach toward Macedonia is a historical precedent in which a single state, let alone the international community, insisted on a

country's name change and made it a condition for progress in international relations, allowing the process to be prolonged over decades. Although Macedonia had been recognized by more than half of the United Nations member states, including some EU member states, the establishment of official relations with the EU was conditioned upon meeting the demands of a single country - Greece. The EU's failure to actively address or resolve the dispute effectively delegated its authority to Greece, allowing decades-long obstruction of Macedonia's accession process. By treating Greece's position as a precondition rather than exercising its own leverage, the EU demonstrated a lack of strategic leadership and undermined its credibility as a supranational actor capable of enforcing collective decision-making. Interestingly, despite the EU's insistence on these conditions imposed by its member state, EU did not participate in the mediation or facilitation of the process, instead leaving the role of mediator to the UN, further highlighting the asymmetry between formal authority and practical influence in EU enlargement policy.

Regarding the second blockade of Macedonia's accession process, imposed by Bulgaria, it is noteworthy that no previous EU enlargement required a candidate country to deny the existence of its own language, rename it or reinterpret its national history. Indeed, following Bulgaria's veto of Macedonia's accession, only two EU member states, Czechia and Slovakia, vetoed the European Council's enlargement conclusions. These countries objected to the content, asserting that it contained elements of historical falsification (related to Bulgaria), which they argued could be highly detrimental to the enlargement process and might introduce further complications (EWB, 2020). They stated that they would not allow the Union to serve as an arbiter of their shared histories, nor dictate how national identities or language should be defined and used. Unfortunately, the dispute is still unresolved, although concerns about prioritization of bilateral agreements and the pursuit of domestic political agendas at the EU level have also been raised on several occasions by European officials. This divergence in EU treatment illustrates how enlargement outcomes are shaped not only by formal accession criteria, but also by the strategic calculations of member states and the broader geopolitical context. It is supposed that this divergence stems from the EU's interests in natural resources, abundant in Ukraine, and its lack of strategic interest in Macedonia. Consequently the fact that EU has no dependence on Macedonia, but does on Ukraine (for some issues), has shaped the EU's policy toward the two countries. Macedonia appears to have little exclusive value to offer the EU. From a geopolitical standpoint, Macedonia is a landlocked country with limited transportation infrastructure. Although Corridor 8 is an advantage, Corridor 10 remained in a stagnant state for decades. On the other hand, the two countries that delayed Macedonia's accession have greater importance for the EU, offering larger access to the

Mediterranean and Black Sea. Even though both countries had economic challenges and incomplete reforms at the time of their accession, they nonetheless became members largely due to the geopolitical interests of the period. Although Greece's accession raised concerns - particularly regarding agriculture and state support for favored industries - the European Council proceeded with enlargement. In fact, this decision was driven by the geopolitical motive of consolidating democracy in the region during the Cold War (Schramm, 2025). A similar situation occurred in the case of Bulgaria, which was integrated into EU despite significant and persistent deficiencies in the rule of law, particularly within key state institutions that persisted for many years after accession. The decision was largely driven by the goal of contributing to the regional stability and unification of the continent. Namely, access to the Mediterranean and Black Sea arguably played a significant role in EU decision-making, expanding the Union's borders toward the Black Sea and the eastern Mediterranean, and thus toward the Middle East and northeast Africa. Unlike these enlargements that extended the EU's territorial reach to new strategic frontiers, Macedonia's accession would not expand the Union's geopolitical space, as it is a landlocked country encircled by existing EU members (Greece and Bulgaria) and candidate states (Serbia and Albania). In its case, further EU enlargement toward the East is not feasible, since the Western Balkans form an enclave within the EU, and there are no imminent security threats comparable to those facing Ukraine. For this reason, the EU feels no urgency to integrate the region. Nevertheless, external influences from third powers should not be overlooked in protracted accession cases such as Macedonia's. Potential influences, particularly from Russia or China have in fact served as a motivating factor behind recent steps forward in Macedonia's Euro-integration process.

Unlike in the Macedonian case, the EU stands to gain significantly from Ukraine's accession, despite the substantial cost associated with post-war reconstruction. Among the key benefits are enhanced defense and security (given Ukraine's military experience which could strengthen the EU's geopolitical standing), energy resources (could accelerate the EU's path to energy independence), tech sector and wealth of critical raw materials (would boost technological innovation) (Khachatryan, 2024). Precisely because of these benefits, but also due to the ongoing war, the EU is already considering the possibility of invoking the provision of Article 7 of the Treaty on European Union, for circumventing Hungary's continued vetoes on Ukraine. Under Article 7(1), proceedings can be initiated if there is a "clear risk" of a serious breach of European values. This must be confirmed by a majority vote in the European Parliament. If the risk is confirmed, Article 7(2) allows for the European Council to find the accused member in breach. If that happens,

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Article 7(3) enables the imposition of sanctions, including the suspension of voting rights.

It may be concluded that the results of the analysis elaborated in this paper reinforce the theory of intergovernmentalism related to EU integration, which posits that the states are the principal actors in the decision-making process, guided primarily by their own interests - a view consistent with the realist school of thought in international relations. Furthermore, EU policies toward Ukraine following the Russian invasion, and to some extent during Macedonia's internal conflict, confirm the realist assertion that states act primarily to maximize their security and power (in this case, the power of influence). This realist approach taken by the EU, aims to strengthen the Union's own geopolitical security by stabilizing and expanding its eastern borders, diminishing Russian influence, and stabilizing the Balkan region, long regarded as a "powder keg".

While economic development, democratic stability, and security remain fundamental conditions for all accession processes and are indeed relevant to both the Macedonian and Ukrainian integration paths, security appears to be the most influential factor, especially in the context of the post-invasion geopolitical landscape. The decisive role of geopolitical motives in shaping EU decision-making is further evidenced by the fact that following Russia's invasion, the EU explicitly began using terms such as "geopolitical" and "geostrategic" in its official policies.

## Conclusion

The comparative analysis of Macedonia and Ukraine demonstrates that EU enlargement process is shaped by a complex interplay of formal accession criteria, member state interests and broader geopolitical considerations. Macedonia's prolonged accession illustrates how bilateral disputes, intergovernmental vetoes and the strategic priorities of individual member states can stall integration, even when formal criteria are largely met. In contrast, Ukraine's accelerated accession trajectory highlights how external security threats and the EU's geopolitical imperatives can override conventional timelines and procedural norms, emphasizing the strategic, interest-driven dimension of enlargement.

These cases confirm both intergovernmental and realist perspectives: member states remain the principal actors in shaping EU enlightenment outcomes, while security and geopolitical considerations can decisively influence EU policy when urgency demands. The EU's differentiated approach - normative and rules-based in Macedonia yet strategically accelerated in Ukraine -underscores its dual role as both a normative actor and a geopolitical power.

Ultimately, the experiences of Macedonia and Ukraine suggest that the credibility and consistency of EU enlargement policy depend on the Union's ability to balance normative commitments with strategic interests. For policymakers, these cases offer important lessons: enlargement cannot be understood solely through legal frameworks or institutional procedures; it must be analyzed in light of the dynamic and sometimes conflicting interests of member states, regional security considerations, and broader geopolitical developments.

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# Development of Tourism in Albania During the Last Decade: Case Study of the Vlora Peninsula

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## Abstract

Tourism in Albania is one of the fields that developed later, in line with the other states in the region. In the last decade, tourism in Albania has undergone a transformative and irreversible journey, bringing economic and social development throughout the country. In 2023, Albania ranked 4th globally for the highest increase in the percentage of international tourist arrivals, marking a 56% increase compared to 2019. This research paper aims to examine changes in tourism in Albania, using the Vlora peninsula as a case study. The work will reflect the significant improvements in infrastructure and services, promotion and diversification of tourist offerings, marketing, and other key aspects of tourism development. The current strategy of the Ministry of Tourism for 2024-2030 will be seen as a picture of the current situation and the projection of the Albanian state for sustainable tourism, today also referred to as the Goals of Sustainable Development. INSTAT data show that the number of visitors to Albania in the last 3 years has increased significantly compared to previous years. Interest in tourism in Albania has brought citizens of many European countries who have previously been indifferent to Albanian tourism. Tourist operators registered in the Municipality of Vlora in the last

decade indicate the growth of structures and services for the reception of the high number of foreign tourists in Vlora.

**Introduction**

Albania is a country with great historical and cultural wealth, thanks to its coastline, which covers nearly half its surface area, and has led to significant growth in coastal tourism. In the last decade, the development of tourism has attracted the attention of public and private actors. Albania, washed by the waters of the Adriatic and the Ionian Sea, has undergone significant economic and social progress, which has marked a new era in its history, especially in infrastructure and environmental sustainability. Albania is characterized by natural and cultural diversity; its heritage and history have positioned it as a new tourism destination for tourists from distant countries. In 2023, Albania was ranked 4th globally for the largest increase in the percentage of international tourist arrivals, marking an increase of 56% compared to 2019, as presented in the National Strategy for the Development of Tourism in Albania. The development of tourism in Albania requires both legal and financial support from the Albanian state. The Albanian government has, in the last decade, compiled several development strategies for the sustainable development of tourism in Albania, and has approximated the Albanian national legislation with EU law in order to achieve the level of tourism within the framework of other EU countries.

For the study related to their contribution to tourism revenues, tourism products can be divided into three main categories. This categorization is also accepted by experts in the formation and preparation of the strategic tourism development plan referred to in the final plan of the Albanian government 2024-2030. These categories consist of those forms of tourism development that play a significant role in the contribution of the sector to the total economy, grouping them into coastal tourism, natural tourism, and thematic tourism.

Coastal tourism includes coastal tourism, which refers to activities that take place on the seashore, and marine tourism, which refers to activities that take place at sea. This type of tourism is the most important in tourism, and we will discuss its importance in this article and its importance on the coast of Vlora.

Natural tourism is another category of tourist product offered by Albania to foreign visitors. Albania is valued for its beautiful nature and landscapes in the realization of the development of rural, mountain tourism, ecotourism, and outdoor activities such as rafting, skydiving, mountain biking, fishing, trekking, mountain climbing, nature walking, etc. Mountain tourism

is developed in the mountainous relief of Albania in Theth, Vermosh-Lepushë, Valbona and Tropoja, in the Albanian Alps, Dibër and the Bulqiza area, the mountainous area of Tirana, the mountainous area of Elbasan and Librazhd, the mountainous area of Korça, Mount Tomor, Llogara and Karaburun, etc. Llogara and Karaburun, as part of the mountain tourism of the city of Vlora, will have a certain attention in this article, given the fact that they are considered environmentally protected areas of national importance, natural parks.

Thematic tourism is the third category of tourism based on the tourist product, which includes special and specific forms such as agrotourism, event and business tourism, cultural tourism including heritage, history, and faith, as well as food and wine tourism and health tourism, which encompasses thermal, wellness, and medical tourism. During the visit of tourists to Albania, archaeology, heritage, and culture are often identified as their favorite spots. The visited places that offer this thematic tourism are Shkodra, Lezha, Kruja, Durrës, Tirana, Fier, Berat, Elbasan, Korça, Përmeti, Gjirokastra, Saranda, and Vlora.

A special form of thematic tourism is also business tourism. Located in a favorable position in the regional Balkan market and several important European markets, with developed technology and expertise in several medical sectors such as dental care, plastic surgery, cardiovascular surgery, neurosurgery, fertility treatment, and other specialized fields, Albania benefits from natural resources and favorable climatic conditions that support the development of various segments such as thalassotherapy, thermal water therapy, and competitive pricing. These factors have contributed to positive developments in the health and wellness tourism sector, as outlined in the 2019-2023 tourism development strategy.

The Institute of Statistics of the Republic of Albania (INSTAT) publishes every year the annual report of the "Tourism Survey "Holidays and Travels" which, after our research, shows that the number of tourists coming to Albania has experienced a significant increase during the last decade, which evidences that the demand is distributed almost throughout the territory of the Republic of Albania. The article will analyze the tourism development strategy in Albania, aiming for state policies to move towards sustainable tourism development. INSTAT data will be presented in a tableau to present the development of tourism in Albania, and in particular in the Vlora Peninsula, in the last decade. The data obtained from the Vlora Regional Tax Directorate and the Vlora Municipality will present the change in accommodation structures as a criterion for increasing the development of tourism and the economy in the Vlora Peninsula.

**Case study- Vlora Peninsula**

Vlora and its peninsula include a large coastal area that offers all-inclusive tourism. The Gulf of Vlora is located in the southwest of Albania and is the largest natural bay in the country. It lies between the Karaburun peninsula in the west and the coast of the city of Vlora in the east, encompassing a wide water area that opens into the Adriatic Sea and, through the Strait of Otranto, is connected to the Ionian Sea. In the south, it also includes the marine area near Orikum and the Karaburun–Sazan protected area. The only Karaburun-Sazan National Park is a wonder of Albanian nature. The "Karaburun – Sazan" aquatic/marine ecosystem, declared a "national marine park" (category II) by Decision of the Council of Ministers no. 59, dated 26.01.2022, is expanded from 12,428 ha to 12,437.7 ha. It extends over a sea area of 1 nautical mile, along the Karaburun Peninsula (from Cape St. Basil to the Langadha face) and around Sazan Island. The slopes of the Karaburun Peninsula are extremely steep on the western side, with high peaks in the central part. The Karaburun Peninsula is the most prominent place with Mediterranean qualities. It is characterized by a very low level of water turbidity. The medio-littoral environment is characterized by coral formations sometimes over one meter, composed of coral algae, a protected and very special type from a geo-morphological, biological, and tourist point of view, and which can appear with extremely amazing views.

Sazan Island (16km long and 3-5km wide), opposite Vlora and north of the Karaburun Peninsula, has an ellipsoidal shape in the north-northwest-southeast direction, with the highest peak at 345m, at the Devil's Throat. The western part is characterized by vertical rocky shores that are carved by deep canyons and that are expanded by caves that appear mainly underwater, as they do on the Karaburun Peninsula. This fascinating natural landscape offers tourists special landscapes and memories. A factor in the increase of tourism in this part of the country is precisely the provision of facilities to visit these parts of the territory.

The city of Vlora, as the main urban center, has about 130,000 inhabitants according to the 2011 Census and INSTAT projections until 2023. The area surrounding the city of Vlora includes settlements such as Orikum, Radhimë, Dukat, and Tragjas, which are more rural and seasonally populated during the summer, focusing on the development of tourism. The demographic structure is relatively young, with a high percentage of the population in working age (15–64 years), but with significant internal and external emigration. During the summer season, the population of the area triples due to tourism, including both domestic and foreign tourists.

In the last 10 years, tourism in the Gulf of Vlora has undergone a significant transformation. The development of tourism in Vlora has brought positive effects on the development of the country's economy. During the last

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decade, the Vlora Peninsula has been defined as one of the most dynamic and rapidly growing tourist destinations in Albania. INSTAT reports clearly show that Vlora is one of the four favorite destinations to visit in Albania. The demand to visit Vlora is related to the possibility of easy access to an appropriate infrastructure, rich biodiversity, special beaches, clean water, and historical monuments. Several factors have been identified that have made it possible for tourism development to have these rapid increases in the last decade. These factors will be presented and are the focus of our work. The influencing factors are: tourist offers related to the places visited, infrastructure in service of tourism, the growth of tour operators, marketing of Vlora like never before, and offering a new gastronomy to visitors.

The tourist offers of the last decade include a variety of places to visit, offering coastal, cultural, and mountain tourism due to the geographical relief that characterizes Vlora. The opportunity for diverse tourism offers tourists to visit not only the coast and beach holidays, but also to visit cultural heritage sites and gastronomic offers. Inland villages such as Dukati, Tragjas, and Himara have become popular among visitors seeking authentic, rural Albanian experiences beyond the coastline. The average length of stay has increased from approximately 2.5 days in 2014 to around 4.8 days by 2024, a trend that reflects improvements in accommodation standards, tourist infrastructure, and the availability of various activities. Qosja (2022) argues that the tourism offer is still fragmented and focused only on the summer season, creating a lack of alternative products such as cultural, rural, or all-year tourism. For this reason, there is a need for more fruitful cooperation between public institutions and private tourism operators and more effective marketing for the development of all-year-round tourism.

Infrastructure development is another key factor in the development of tourism in the Vlora Peninsula over the last decade. Government policies for the development of infrastructure as a realization of strategic goals in successive years have not only facilitated easier access to the region, but have also increased the overall quality of the visitor experience. Among the road infrastructure, we mention the A2 Highway (Fier-Vlora), which was completed in 2018, significantly reducing the travel time between Tirana, the capital of Albania, near which is also the largest airport in Albania, and Vlora. Infrastructure that has also impacted tourism is the Llogara Tunnel, which opened in July 2024. The 6-kilometer Llogara Tunnel is a transformative project for the southern Albanian Riviera by creating facilities to reach the Palasa area. Urban and Coastal Infrastructure is occasionally subject to changes by local governments. They have invested in promenades, pedestrian paths, bicycle lanes, and public spaces in urban Vlora and coastal areas such as Radhima and Orikum. But from our perspective, although these are mentioned as investments in infrastructure in the service of tourism

development, on the other hand, the current port is in a bad state due to policies to change the construction site of the new port. The rumored Vlora Airport that would operate in the summer of 2025 has not opened yet, and it is thought that the day of offering international flights will be delayed. Brokaj (2014) argues that Local Government has a key role in the sustainable development of tourism through the presentation of appropriate policies for the development of the region where it exercises its authority. Local policies should include the community and address environmental conservation in addition to the objective of tourism development.

Digital Infrastructure has undergone significant improvements. Recognizing the importance of technology-enabled tourism, Vlora has seen improvements in internet connectivity, smart signage, and digital tourism platforms. These tools help travelers navigate the region, book local experiences, and engage with the cultural and natural heritage of the area in a more interactive way. Sika (2023) states that in the development of tourism in Vlora, the improvement of information technologies in tourism is needed because Innovation is not part of the Vlora municipality's strategy in a structured way. It is recommended to create innovation laboratories and use data for decision-making, education, and training of tourism staff.

The opportunity for Sustainable Development is also achieved in the Vlora Peninsula, but this requires the implementation of a model that not only generates economic benefits, but also protects the rich cultural and environmental assets of the region. The development of sustainable tourism in Vlora is achieved through the design and diversification of tourist offers, cultural revitalization and heritage tourism, job creation, and local entrepreneurship. Education and capacity building to create professional training programs in hospitality, ecotourism, environmental management, and foreign languages are essential for sustainable tourism, including innovation and digital technology in the service of tourism. Agaraj & Pulaj (2024) suggest better management of natural resources and digitalization of services, thus improving the tourist experience and ensuring the return of tourists to Vlora.

INSTAT in Albania has been publishing the tourism survey 'Vacations and Travels' for several years. In the surveys published from 2018 to 2023, data on the most preferred destinations for personal or business trips in Albania and trips outside Albania have been presented. In Vlora, the surveyed tourists have a % that is increasing with small increases from 2018 to 2021 and then decreases. Referring to the publications, it is worth noting that in Vlora this is the presentation: 2018 (11.1%), 2019 (11.6%), 2020 (16.1%), 2021 (16.3%), 2022 (15.2%), and 2023 (14.5%). The Family Tourism Survey, "Vacations and Travels" is a statistical survey carried out by the units of household economy and covers all individuals over 15 years of age with usual residence in Albania. These data, therefore, only show tourism in Vlora by

those residing within the territory of Albania and do not include data on tourists residing outside the territory of Albania.

## Conclusions on Challenges and Risks for Tourism Sustainability in the Vlora Peninsula

Despite the growing trend of tourism development, the Vlora Peninsula faces a number of challenges that threaten the environmental, social, and legal integrity of the region. Sustainable development requires immediate interventions based on law, comprehensive planning, and effective institutional control. The construction of the International Airport near the Narta Lagoon, a protected area with RAMSAR status, poses a significant risk to biodiversity and violates international principles of the protection of sensitive ecosystems. Rigorous implementation of the Law on Environmental Protection and respect for international obligations for environmental impact assessment (EIA) are required, with mandatory involvement of interested communities. Seasonal congestion in areas such as Dhërmi, Jalë, and Palasa creates pressure on water supply, energy, waste management systems, and the road network.

In the absence of a carrying capacity analysis and functional regulation of land use, there is a risk of violating environmental and health norms. Urban planning should include provisions for managing visitor flows and building infrastructure resistant to seasonal loads. The tourism industry faces a significant shortage of trained personnel in hospitality, guidance, and multilingual communication. This constitutes an obstacle to quality standards and equality in employment, especially for women and young people in rural areas.

Public policies should promote vocational education and equal inclusion through legal and fiscal instruments. The concentration of investment in the tourist coast has left behind the interior areas of the region, reinforcing socio-economic divisions. Regional development policies should promote a fair distribution of resources and the integration of rural tourism, in line with the principles of territorial cohesion provided for by European law.

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**Data Availability:** All data are included in the content of the paper.

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# Cultivating Gender Equality to Achieve Educational and Social Sustainability among Indigenous Women of Malaysia

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## Abstract

The ultimate aim of sustainability is to meet present-day requirements without endangering those of future generations. Gender equality is essential for social and educational sustainability because it allows people and society to reach their full potential, which produces more inclusive, equitable, and profitable results. This study depicts certain cases of the indigenous women in Malaysia, exploring the gender equality aspects in achieving educational and social sustainability in the indigenous peoples. A qualitative case study approach was employed for this case study. A semi-structured interview was conducted with 10 indigenous women from two main tribes, which are the Mah Meri and Temiar. Data were transcribed and analysed using a thematic analysis process. The findings reveal that there were three major themes generated from the thematic analysis, which are contributions to society and freedom in the pursuit of education. This case study highlights that indigenous women play a vital role in creating a balance between the responsibilities of the genders in order to achieve SDG5 (gender equality) and educational sustainability in indigenous communities.

**Keywords:** Gender equality, sustainable education, social sustainability, indigenous

**Introduction**

The Sustainable Development Goals (SDGs) were created by the international community, specifically through the United Nations, as part of the 2030 Agenda for Sustainable Development. This article pertains to the objectives of SDG 5 (Gender Equality) and SDG 4 (Quality Education). Gender equality is essential for achieving social and educational sustainability among the Indigenous communities in Malaysia. Sustainable development includes terms like climate change, governance, indigenous organisation, land, perspectives, adaptation, conflict, and more, and this seems to be the most significant theme in research examining how indigenous populations contribute to the SDGs (Bansal et al. 2024). Gender equality refers to the belief that all individuals, men and women, boys and girls, have equal access to opportunities, resources, and treatment in order to realise their potential, preserve their human rights and dignity, and participate in and benefit from political, social, cultural, and economic advancement, according to Guthridge et al. (2022). The ability of a society to preserve and grow social cohesiveness, equity, and well-being across time is known as social sustainability. In recent years, social sustainability as a crucial component of sustainability has come to be recognised more and more. Its main goals are improving life quality and attaining human well-being (Wang & Kee, 2024). A socially sustainable society ensures that no one is left behind, particularly vulnerable groups like Indigenous women, who often face multiple layers of discrimination based on both gender and ethnicity. The term sustainable education describes the dissemination of information that guarantees a balanced national development that takes into account human needs as well as social and economic advancement (Alam, 2023). It equips individuals with the knowledge and skills to improve their lives and communities, encourages critical thinking, civic engagement, and environmental awareness and supports lifelong learning and personal development. Ambitious goals are necessary to encourage creative research on complex systems and to expand and intensify the discussion well beyond the academic community, as stated in the fourth Sustainable Development Goal (SDG 4) on "quality education" (WEF, 2016). The underrepresentation of women in science fields, especially within academia, is also a persistent global issue with complex, systemic roots. Papadakis et al. (2018) found that the underrepresentation of women in science fields, particularly in the academic area, is a problem that exists in various countries. As Indigenous peoples, they face structural disadvantages, including poverty, geographic isolation, and limited access to public services. For Indigenous women, these challenges are compounded by traditional gender roles and systemic discrimination, leading to lower school enrolment, early marriage, and restricted participation in social and economic life. According to UNESCO (2022), the report stated particularly within the

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context of SDG 4.5, which focuses on equity and inclusion in education. In this report, consistently highlight the need to ensure indigenous peoples and linguistic and cultural minorities have access to quality education and are included in educational systems.

In Malaysia, Indigenous women often have limited access to formal education, healthcare, economic resources and political representation. In education, they have limited access to schools in remote areas, early marriage or domestic responsibilities that disrupt girls' education, a lack of culturally appropriate curriculum or Indigenous language support and very few female role models or Indigenous women teachers. Promoting gender equality ensures that Indigenous women have equal opportunities to access and complete their education, which is critical for breaking cycles of poverty and marginalisation. Educated women are more likely to contribute to community leadership, advocate for Indigenous rights, and improve the well-being of future generations. Socially, when women are included in decision-making processes, communities become more resilient, inclusive, and capable of preserving both cultural identity and sustainable development. Therefore, empowering Indigenous women through education is not only a matter of rights but a foundational step toward long-term social and educational sustainability for their communities. Prominently, collaborative efforts to empower indigenous people, protect their rights, and involve them in decision-making processes are essential in light of the 2030 Agenda for Sustainable Development. Therefore, this article will explore the gender equality aspects in achieving educational and social sustainability in the indigenous communities.

## Indigenous People of Malaysia

Malaysia is home to a rich diversity of indigenous peoples, each with distinct languages, cultures, spiritual beliefs, and traditions. These communities are broadly referred to as "Orang Asal", meaning original people in Malay. 0.8% of Peninsular Malaysia's population is made up of the 18 Orang Asli subgroups that are part of the Negrito (Semang), Senoi, and Aboriginal-Malay groupings. Table 1 shows the three primary tribes of Orang Asli are the Negrito, Senoi, and Proto-Malays (Masron, Masami, and Ismail, 2017).

**Table 1:** Ethnic Divisions of Orang Asli in Peninsular Malaysia

| Group | Region |
|---|---|
| Negrito (Semang) | Northern Peninsular Malaysia |
| Senoi | Central highlands |
| Proto-Malay (Aboriginal Malay) | Southern Peninsular Malaysia |

The earliest Orang Asli tribes to settle on the peninsula were their forefathers more than 4,000 years ago. They have since adopted a hunter-gatherer and modest farming way of life. The Orang Asli are the custodians of some of Malaysia's richest cultural and ecological knowledge. Ensuring their rights, dignity, education, and participation is essential for a just and sustainable Malaysia. Today, according to the 2020 survey, Malaysia's Indigenous Peoples were thought to make up about 11% of the country's 32.4 million inhabitants. In 2020, there were 206,777 Orang Asli in Malaysia. Orang Asli women, in particular, have been vocal in their advocacy for greater representation of their identity and presence in Malaysian society. They encounter a variety of challenges in their battle for rights, many of which are linked to their identity as Indigenous women and people. In order to achieve true social justice and empowerment, it is imperative that gender equality and feminism within Orang Asli be addressed. It is crucial to acknowledge that Indigenous women in this community frequently encounter a variety of obstacles and prejudice, such as limited access to economic opportunities, healthcare, and educational opportunities (Dong et al., 2022).

**Methods**

The two main indigenous tribes in Malaysia that are the subject of this case study are the Mah Meri and Temiar tribes. This case study employed a qualitative approach. A semi-structured interview was employed to collect the data from the informants of the study. A total of 10 indigenous women from two main tribes participated as the informants of the study. The researchers used a snowball sampling technique to select the informants that were suggested by the Headman (Tok Batin).

**Research Site**

This case study centred on two research sites in Peninsular Malaysia, where the Mah Meri and Temiar tribes are located. The Mah Meri tribe is situated at Pulau Carrey, Selangor, and the Temiar tribe was located at Kuala Betis, Kelantan. Pulau Carrey is an island in Selangor, Malaysia and it is located to the south of Port Klang and north of Banting town. It is a huge island separated from the Selangor coast by the Langat River. Kuala Betis is an indigenous settlement in the south of the state of Kelantan. It is situated about 30 kilometres from the city of Gua Musang.

**Data Collection**

In this study, the semi-structured interview was used as the instrument for data collection purposes. The instrument was developed by first determining the research objectives to be investigated in this study as well as the main themes. The set of semi-structured interviews was developed with a

draft of open-ended, non-leading questions that invite rich, detailed responses that were formulated for flexibility. The interview questions were designed with adapted and simple language to fit the local culture and communication style. The interview questions were validated by three experts before the interviews were implemented. Before the data was collected, the researchers asked for ethical approval from the institution and the approval was obtained. In this study, 10 indigenous women were chosen as informants for the interviews. Focusing on two tribes allows the researcher to go deeper into the lived experiences, cultural contexts, and gender dynamics unique to each group. Moreover, the two selected tribes (Mah Meri and Temiar) represent different cultural practices, social structures, and geographic locations of indigenous women in Malaysia. Five women from Mah Meri tribe and five women from Temiar tribe were selected for the interview and they were asked to respond to the interview questions.

**Data Analysis**

This study explored the qualitative information gathered during the data collection process. The researchers use the qualitative data analysis software, Atlas. ti 8 to manage and organise coded data using the thematic analysis approach. The audio data were transcribed verbatim, and the data in the local language were translated into English after transcription by the researchers.  The researchers repeatedly read the transcripts to become immersed and familiar with the content. The initial codes were generated by the software and the codes were then organised into potential themes. Themes were reviewed to ensure they accurately represented the coded data and the overall dataset. Then, each theme was clearly defined, with attention to what aspect of the data it captured. The final stage involved selecting vivid, compelling quotes from participants to illustrate each theme. To validate all the themes, a member checking technique was performed to confirm the findings. To ensure the credibility of thematic analysis, the researchers used Inter-coder reliability to compare coding results, and resolve differences for consistency and reduce subjective bias.

**Results and Discussion**

The results of the semi-structured interview's qualitative data are shown in this section. The data from the informants were analysed using the thematic analysis method. The results revealed three major themes, which are (1) respect for human rights, (2) involvement in the indigenous community, (3) education accessibility and lifelong learning.

### Respect for human rights

Gender equality and indigenous rights are deeply interconnected. Respecting human rights is fundamental to peace, development, and justice. For indigenous communities, especially women and marginalised group,s ensuring these rights is essential for achieving social inclusion, cultural survival, and sustainable development. According to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), which acknowledges that Indigenous Peoples have the right to be free from any kind of discrimination, in the exercise of their rights, the right to self-determination is fundamental to the international human rights framework (Wilkes et al., 2025). Through the thematic analysis, respect for human rights emerged as the first theme and an initial support in the journey toward gender equality. It highlighted how systemic exclusion, lack of protection, and cultural removal undermine indigenous women's rights, ultimately hindering their social sustainability. Without elevating people who are frequently silenced, social sustainability cannot be accomplished. The majority of participants appeared to receive equitable treatment in their communities based on this emerging theme. From the analysis,  Participant 1 from Mah Meri and Temiar tribes narrated as follows:

> *"Women and men were treated very fairly...I can deliver my speech and share my opinions freely ". (Participant 1, Mah Meri tribe)*

> *"We were treated the same in my village and we can also express ourselves openly". (Participant 1, Temiar tribe)*

Men and women were treated equally in their tribes, according to both participants and they had no trouble voicing their speech in communities. The UNDRIP stated that a roadmap for human rights policy towards Indigenous peoples should be implemented, but it does not create any new rights for them that are not previously granted by other international human rights instruments (Stavenhagen 2009). Based on regional context, women from the Jahai tribe who were researched by Karim et al. (2024) agreed that they were treated equally and had the freedom to voice their opinions and further their education. This proved that human rights are respected by their indigenous communities. Therefore, promoting gender equality among indigenous women by respecting their human rights is essential to creating inclusive, resilient, and socially sustainable societies in Malaysia.

### Involvement in the indigenous community

Indigenous women play a vital role in sustaining their communities. However, their involvement in formal leadership and decision-making processes remains constrained by gender norms and traditional power hierarchies. Promoting gender equality within indigenous communities not only empowers women but also strengthens the community's resilience, sustainability, and cohesion. Ensuring that indigenous women are actively engaged in education and cultural preservation is essential for achieving inclusive development and social justice. Involvement in Indigenous communities emerged as the second theme from the analysis, highlighting the crucial but frequently overlooked role that women play in maintaining cultural practices and enhancing the well-being of communities. Making a contribution to one's community is crucial for both personal growth and the community's general health. People can directly enhance their surroundings, foster social interactions, and feel a feeling of belonging because contributions can be made in any situation. It is possible that the social and personal traits that lead to contribution can be learnt and honed in a variety of developmental settings (Deal et al., 2025). Indigenous women play a key role in transmitting traditional knowledge and identity to future generations. In terms of social sustainability, when women help lead, communities benefit from diverse knowledge, balance, and resilience. In terms of cultural survival, active participation boosts women's self-esteem, status, and ability to make decisions, which will strengthen indigenous women in their communities. Participants 1 from the Temiar tribe and Participants 2 and 3 from the Mah Meri tribe provided insightful replies about their engagement in indigenous society.

> "...in the community, the task of women to help people who are sick in the village ". (Participant 2, Mah Meri tribe)

> "...while in the community, women have to help the community ...for instance, during any events, we help each other... ". (Participant 3, Mah Meri tribe)

> "...we do Sewang dance in events with others ...( Participant 1, Temiar tribe)

However, 1 participant highlighted that she did not contribute anything for her community.

> "...in my community I do not have any task..."( Participant 5, Temiar tribe)

This theme focused on the extent and type of indigenous women's involvement in local events and cultural practices like 'Sewang', which is their cultural dance.

The way women are included, respected, and empowered in their indigenous cultures is reflected in this theme. Language, healing, storytelling, and rituals are all preserved by women in indigenous societies. Thus, Indigenous women are essential in transmitting traditional knowledge and identity to the next generation, which greatly enhances sustainability.

### Education accessibility and lifelong learning

Despite international frameworks supporting the right to education for all, indigenous communities, including the Orang Asli in Malaysia, face persistent barriers to accessing quality, culturally relevant education. Geographic isolation, poverty, and linguistic and cultural marginalisation contribute to lower enrolment and completion rates, particularly among girls. Although many indigenous peoples still experience marginalisation, acute poverty, and human rights violations, they are essential to maintaining the biological and cultural diversity of the world. Lifelong learning initiatives such as adult literacy programs and community-based vocational training are critical for empowering indigenous women, promoting gender equality, and supporting sustainable community development. The idea of lifelong experiential learning, which aims to create the critical attitudes, understandings, and abilities necessary to exhibit continual effective practice, demonstrates the necessity of a trans-educational approach to Indigenous intercultural potential development (Saunders et al. 2024). Inclusive education policies that recognise and integrate indigenous knowledge, languages, and perspectives are essential for achieving SDG 4 and fostering social justice. Education is a human right and a pathway to gender equality. This final theme examines how gender equality and the sustainability of education in Indigenous communities are supported by inclusive, ongoing, and equitable access to education. This theme is crucial because it provides indigenous women with knowledge, voice, skills, and opportunities to participate in culture. With regards to gender equality as an attribute to education sustainability, equal access allows women to pursue knowledge, careers, and leadership. Moreover, when girls stay in school and succeed, they will engage in meaningful learning that reflects their culture and needs, and it will strengthen lifelong learning in the indigenous community. Human and interspecies knowledge transfer and connectedness are crucial to the work of Indigenous cultural-ecological restoration through intergenerational and lifelong learning (Williams, 2024). Based on this emerging topic, Mah Meri tribe members, Participant 1 and Participant 3 stated that the government helped them by providing them with educational opportunities in schools and

by sending them abroad to acquire experience and knowledge for lifelong learning.

> *"...the government provided various education opportunities ...enhance Mah Meri handicratfts and invite tourists to come here for a cultural visit so it will bring education to us"( Participant 1, Mah Meri tribe)*

> *"...the government allowed us to go to school ...and they send the women to overseas for handicrafts exhibitions (Particpant 3, Mah Meri tribe)*

Participant 3 and Participant 5 stressed that they can go to school for education.

> *"...we can go to school ..."( Participant 3, Temiar tribe)*

> *"...the goverment support us to go to school ..."( Participant 5, Temiar tribe)*

The theme of education accessibility draws attention to the ongoing disparities that Malaysian indigenous women face in obtaining high-quality, culturally relevant education. Addressing these barriers is key not only to achieving gender equality but also to ensuring education systems are sustainable, inclusive, and representative of indigenous voices and values.

**Conclusions**
This case study aims to explore the gender equality aspects in achieving educational and social sustainability in the indigenous communities. In conclusion, cultivating gender equality among indigenous women in Malaysia is not only a matter of justice but a foundation for achieving lasting educational and social sustainability. Promoting gender equality is key to enhancing their social participation, preserving Indigenous identity and cultural practices, reducing poverty and dependence and creating intergenerational benefits. The results of the study have highlighted critical themes such as respect for human rights, involvement in indigenous communities and education accessibility and lifelong learning. A multidimensional strategy that upholds cultural identity, eliminates structural obstacles, and encourages inclusive, gender-responsive policies is needed to address these issues. Malaysia can create communities that are more resilient, equitable, and sustainable by making sure indigenous women are empowered through education and acknowledged as important change agents. However,

there will be real progress only if indigenous women are empowered and encouraged to take the initiative. Hence, achieving sustainability requires more than just policy reform; it demands inclusive approaches that honour indigenous knowledge, support gender equity, and remove structural barriers. Empowered indigenous women are not only more likely to access better living and health outcomes, but they also play a crucial role in preserving indigenous languages, traditions, and ecological knowledge. This investment therefore yields multigenerational benefits, advancing both gender equality and indigenous community well-being in alignment with global development goals such as SDG 4 and SDG 5.

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# The Role of Artificial Intelligence (AI) in Advancing Gender Equality and Women's Empowerment in Academia: A Conceptual Framework

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## Abstract

Education has a major impact on a society's political, social, economic, technological, and human capital development. The history of women's exclusion from higher education has resulted in a lack of diversity among the highest levels of leadership, particularly at significant institutions. Barriers, including institutional bias, gender preconceptions, and a lack of administrative support, must be overcome by women who aspire to hold leadership positions in higher education. However, AI is an effective tool for promoting gender equality and empowering women around the world through a number of charitable endeavours. The main aim of the study was to present a conceptual framework of AI's role for gender equality and women's empowerment in academia. This study used a qualitative and conceptual design of study. A total of 30 identified reviewed articles published between 2015 and 2025 were systematically analysed using thematic analysis to identify the role of AI among women in academia. Three major themes were identified: AI capabilities and tools, empowerment and support mechanisms, and gender equality and institutional impact. A conceptual framework was developed from these findings and shows that these three framework components were connected through a multifaceted, intricate network of interactions and introduced to guide future research that explains the role of AI in advancing gender equality and women's empowerment in academia. The

study serves as a catalyst for creating a more equitable AI landscape. Consequently, this study will promote diversity, which underscores the importance of gender diversity in AI, and can lead to more innovative and well-rounded solutions.

## Introduction

Gender equality is a basic human right that must be the cornerstone of a world that is prosperous, peaceful, and sustainable. Promoting gender equality is the primary focus of Sustainable Development Goal 5 (SDG 5), which was created by the UN in 2015 (Somerville & Pesantes, 2022). The fifth SDG 5 aims to promote equal leadership opportunities and women's full and effective engagement in all levels of decision-making in public, political, and economic life. This particular goal primarily addresses concerns pertaining to women's leadership opportunities and women's full and effective engagement in all levels of decision-making in public, political, and economic life. This particular goal primarily addresses concerns pertaining to women's leadership opportunities. In times of economic instability, it is even more important to enable every employee to reach their full potential because women comprise a significant share of the global workforce. Achieving gender parity in the workplace is crucial for the well-being of the global economy as well as for women's experiences but there is still no country or industry that has achieved gender parity in leadership as of yet. According to the World Economic Forum (2024), it is unlikely to change anytime soon unless a major shift in approach occurs. In terms of female representation, there have undoubtedly been some encouraging advancements. More women eventually rise to senior positions in sectors like education, government, and consumer services, where more women start in entry-level roles, despite the ongoing drop. The complicated issue of gender equality has led to a myriad of legislation in nations across the globe. No matter where they reside, discrimination against women persists, and it covers every facet of life, such as politics, work, and education (Karim et al., 2021). Despite growing discourse on ethical AI, there remains a significant gap in research exploring how AI can be strategically leveraged to promote gender equality and empower women in academic institutions. Because women have historically been excluded from higher education, there is a lack of diversity in the top tiers of leadership, particularly at larger schools. Obstacles, including institutional bias, gender preconceptions, and a lack of administrative support, must be overcome by women who aspire to hold leadership positions in higher education. Research on AI in higher education often emphasizes technical fairness but overlooks empowerment,

intersectionality, and systemic impacts on women in academia. Evidence is limited, concentrated in the Global North, and reliant on proxy measures. A comprehensive, context-sensitive framework is needed to link AI adoption with gender equity outcomes.

**Objective of the Study**

As AI applications spread throughout the world in the digital age, the study aims to develop a conceptual framework of AI role for gender equality and women's empowerment in academia.

**Methodology**

*1.      Research Design*

This study adopts a qualitative, conceptual research design aimed at developing a conceptual framework that illustrates how AI can advance gender equality and women's empowerment in the academic field. This study utilised an integrative literature review which is a systematic literature review to explore and synthesise the main components of the proposed framework and combined with thematic analysis approach following Braun & Clarke's (2006) six-phase model: (1) familiarisation, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes and (6) producing the report.

*2.      Data Sources and Search Strategy*

The aim of the study was to construct a conceptual framework illustrating how AI can advance gender equality and women's empowerment in academic settings. The review synthesised knowledge from interdisciplinary sources, including peer-reviewed journal articles, conference proceedings, and policy documents from international organisations such as UNESCO, UN Women, OECD. The research is based on an integrative literature review, drawing from interdisciplinary sources that cover scholarly articles, policy documents from international organisations and case studies from higher education institutions related to AI integration, higher education leadership, and gender equality. A systematic search was conducted across major academic databases including Scopus, Web of Science, IEEE Xplore, and Google Scholar, to ensure coverage of both technological and social science perspectives. The search included publications between 2010 to 2025. Using an Atlas.ti 22 data software, keywords and Boolean operators were applied to refine results. To ensure comprehensive retrieval, Boolean operators (AND, OR, NOT) and specific keyword combinations such as "artificial intelligence" AND "higher education" AND "gender equality", "AI" AND "women's empowerment" AND "academia", and "machine learning" OR "learning analytics" AND "gender bias" were applied. The

initial search yielded 120 results, which were screened for relevance using title, abstract, and full-text review. The selected keywords spanned were Artificial Intelligence, Gender Equality, Academic Field, and Framework from the analysis. The PRISMA approach was used for the selection and screening of pertinent papers, ensuring a thorough and methodical evaluation.
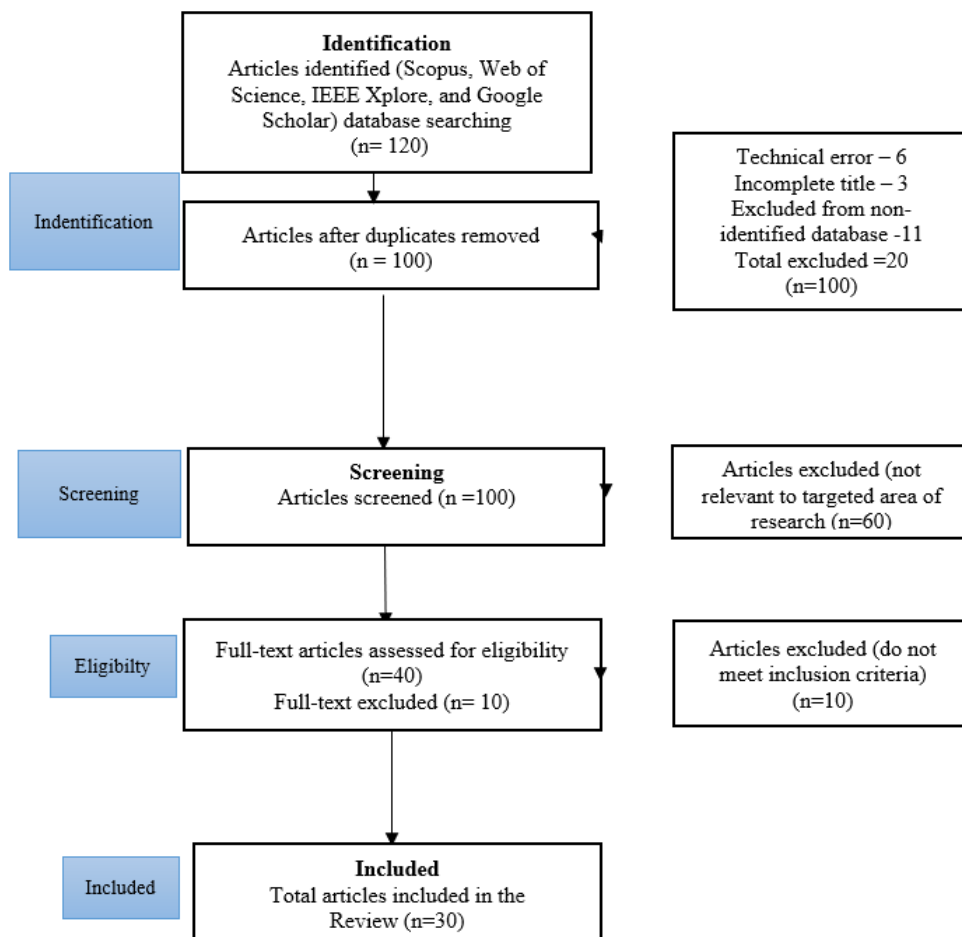


**Figure 1.** Reviewed Articles Identification Process Diagram

The selection and screening process for literature followed the PRISMA method, and it is illustrated in the PRISMA flow diagram in Figure 1. Specific inclusion and exclusion criteria were developed to ensure that only relevant and appropriate research was included. Only sources that: (a) discussed AI applications relevant to higher education or academic contexts, and (b) addressed gender equality or women's empowerment explicitly, were included. Studies focusing exclusively on industry or unrelated technological contexts were excluded. The researcher used the inclusion criteria: (a) they had to be relevant to AI in the academic field; (b) they had to focus on women's

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empowerment or gender equality; (c) they had to be peer-reviewed publications or reliable policy reports; and (d) they had to be published between 2015 and 2025. After the previously indicated procedure, 30 scholarly articles were obtained from the database. After removing 20 of the 120 documents,100 publications were left that will give a reliable research perspective on the AI for gender equality and women's empowerment in the academic field.. Through the PRISMA-guided process, 120 sources were refined to 30 key publications directly addressing AI, higher education, and gender equality. This rigorous selection ensures credible and relevant perspectives on how AI supports women's empowerment in academia.

*3.    Data Analysis*

The next step was to analyse the data collected. All selected literature was imported into the ATLAS.ti 22 qualitative data software for systematic coding and theme analysis. Using Braun and Clarke's six-phase method, each source was coded for text segments relevant to AI capabilities, empowerment mechanisms, and gender equality outcomes. Through iterative coding, thematic analysis relationships emerged which were grouped into three core components: AI Capabilities and Tools, Empowerment and Support Mechanisms and Gender Equality and Institutional Impact. Atlas.ti's tools helped trace links and feedback loops between themes, culminating in the conceptual framework.

**Results and Discussion**

This literature review analysed 30 articles related to the study, which are divided into three main components: (1) AI Capabilities and Tools, (2) Empowerment and Support Mechanisms and  (3) Gender Equality and Institutional Impact. These three categories offer a thorough summary of the evolution of research on AI roles in education contexts, as well as how AI can advance gender equality and women's empowerment in the academic field. The analysis of 30 reviewed articles are presented in Table 1.

**Table 1.** Analysis of  Reviewed Articles (n = 30)

| Category | Author & Year | Article Titles | Focus Area | Region |
|---|---|---|---|---|
| AI Capabilities and Tools | Ahmad et al., 2024 | Awareness, benefits, threats, attitudes, and satisfaction with AI tools | Level of awareness, perceived benefits, threats, attitudes, and level of satisfaction with AI tools among individuals | Asia & Africa |
| | Cowan et al., 2024 | Can AI Level the Playing Field? How AI-Assisted Assessment Impacts Gender Bias in Student | AI  bias in marketing instructors' evaluations | North America |

| | | Evaluations of Marketing Instructors | | |
|---|---|---|---|---|
| | Pedró et al., 2019 | Artificial Intelligence in Education: Challenges and Opportunities for Gender Equality | AI tools in education and their impact on women's participation | Europe |
| | Maurat et al., 2024 | A Comparative Study of Gender Differences in the Utilization and Effectiveness of AI-Assisted Learning Tools in Programming Among University Students | Gender differences in adoption of AI teaching tools | Asia |
| | Mat Yusoff et al., 2025 | Understanding the role of AI in Malaysian higher education curricula: an analysis of student perceptions | The role of Artificial Intelligence (AI) in higher education curricula | Asia |
| | Liu & Murphy, 2022 | Applying a Trustworthy AI Framework to Mitigate Bias and Increase Workforce Gender Diversity | Ethical discussion regarding gender equity in AI-enabled workforce decision applications | North America |
| | Albuquerque et al., 2024 | From hype to evidence: exploring large language models for inter-group bias classification in higher education | Classifying bias in learning | Europe |
| | Shah, 2024 | Gender Bias in Artificial Intelligence: Empowering Women Through Digital Literacy | Potential of digital literacy to empower women in AI | Asia |
| | Møgelvang, 2024 | Gender Differences in the Use of Generative Artificial Intelligence Chatbots in Higher Education: Characteristics and Consequences | Generative artificial intelligence (genAI) chatbot use and gender differences | Europe |
| | Bulathwela, 2024 | Artificial Intelligence Alone Will Not Democratise Education: On Educational Inequality, Techno-Solutionism and Inclusive Tools | The future of AI in Education | Europe |
| | Hwang et al.,2020 | Vision, challenges, roles and research issues of Artificial Intelligence in Education | Implementing AIED in different learning and teaching setting | Asia |
| Empowerment and Support Mechanism | Kalim et al., 2025 | Barriers to AI adoption for women in higher education: A systematic review of the Asian context. Smart Learning Environment | Barriers and biases in AI adoptions and representation of women in AI policy formulation | Asia |
| | Mahmood et al.,2023 | Organizational culture, AI training, and technological | The factors that influence leadership | Asia |

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| | | tools: influencing women's leadership success in the unique context of the UAE | experiences of women in UAE | |
|---|---|---|---|---|
| | Ebrahimi et al,2024 | Empowering Women through Artificial Intelligence: Opportunities and Challenges | AI opportunities an challenges among women | Asia |
| | Mehrunisa et al., 2024 | The impact of artificial intelligence on women's empowerment, and work-life balance in Saudi educational institutions | The implications of AI capabilities on work-life balance and the empowerment of female faculty members | Asia |
| | Rana et al., 2024 | Assessing AI adoption in developing country academia: A trust and privacy-augmented UTAUT framework | The users' perspective to align AI-based technologies with the education system | Asia |
| | Ferk Savec et al., 2025 | The Role of AI Implementation in Higher Education in Achieving the Sustainable Development Goals: A Case Study from Slovenia | SDGs and AI in Education | Europe |
| | Voutyrako & Skordoulis, 2025 | Algorithmic Governance: Gender Bias in AI-Generated Policymaking? | Governance and gender bias in policymaking. | Europe |
| | Jin et al.,2025 | Generative AI in higher education: A global perspective of institutional adoption policies and guidelines | Characteristics of GAI | Africa, Asia, Europe, Latin America, North America, and Oceania |
| | Roumate, 2023 | Ethics of Artificial Intelligence, Higher Education, and Scientific Research | Ethics of Artificial Intelligence in HEIs | Morocco |
| Gender Equality and Institutional Impact | Helmiatin et al.,2024 | Investigating the adoption of AI in higher education: A study of public universities in Indonesia | Attitudes toward the adoption of AI in higher education | Asia |
| | Kumar et al., 2022 | Gender and feminist considerations in Artificial Intelligence from a developing-world perspective, with India as a Case Study | The affect of AI and robotics affect women's opportunities in developing countries | Asia |
| | Leavy, 2018 | Gender bias in artificial intelligence: The need for diversity and gender theory in machine learning. | Gender bias in training data for machine learning algorithms | Europe |
| | Moges, 2019 | One-Hand Clapping: Gender Equality and Its Challenges in Pastoralist Secondary Education in | Gender equality and challenges | Ethiopia |

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| | | Afar Region--A Quality Concern | | |
|---|---|---|---|---|
| | Quaquebeke et al., 2023 | The Now, New, and Next of Digital Leadership: How Artificial Intelligence (AI) Will Take Over and Change Leadership as We Know It | Academia and practice that idealise human leadership and think that this support can never be overtaken by AI | Europe |
| | Najafi, 2025 | Strengthening Women's Leadership and Management in the Digital Age: Innovation, Opportunities, and Challenges | Digital transformation positively impacts women's leadership in academia | Asia |
| | Srinate et al., 2025 | Transforming Women's Futures: A Case Study on The Role of Artificial Intelligence in Digital Education in State of UttarPradesh, India | AI integrated into digital education for reshaping opportunities for empowering women | Asia |
| | Kautsar et al.,2023 | Prediction of Gender-Biased Perceptions of Learners and Teachers Using Machine Learning | Gender- biased in AI Education | Asia |
| | Ehlers, 2020 | Digital leadership in higher education. | Identifying the dimensions of good HE leadership | Europe |
| | Chauhan, & Kaur, 2022. | Gender Bias and Artificial Intelligence: A Challenge within the Periphery of Human Rights | AI and threats to gender equality | Asia |

The review identified three predominant themes that structure the current discourse on artificial intelligence (AI) and gender equality in higher education: (1) AI Capabilities and Tools, (2) Empowerment and Support Mechanisms, and (3) Gender Equality and Institutional Impact. The first theme, AI Capabilities and Tools, was represented by eleven keywords, including pedagogical integration, assessment tools, fairness, bias in large language models, and gender inclusion. This cluster highlights how AI is positioned both as a transformative educational tool and as a site where issues of bias and equity emerge. While much of the literature emphasises the potential of AI to enhance learning processes, there is equal concern about algorithmic bias, gender disparities, and the inclusivity of AI-driven educational environments.

The second theme, Empowerment and Support Mechanisms, was attached by ten keywords, notably institutional dynamics, leadership, governance, capacity building, policymaking, and ethics. This theme shifts attention from technological tools to the structural and cultural supports necessary for equitable adoption. It emphasizes that leadership readiness,

ethical policymaking, and governance mechanisms are crucial for ensuring that AI implementation empowers rather than marginalizes. In particular, institutional capacity building and policy alignment emerge as central levers for creating an enabling environment that promotes inclusivity and fairness in AI adoption.

The third theme, Gender Equality and Institutional Impact, was the largest cluster with thirteen keywords, including institutional culture, equity, access, bias origins, content bias, fairness, and leadership. This theme foregrounds how AI adoption intersects with broader systemic issues in higher education, such as gender bias, cultural norms, and governance practices. The literature underscores that AI can function as both a catalyst for equity and a mechanism for reinforcing existing inequalities, depending on how it is embedded into institutional systems. Here, challenges such as bias in training data, inequitable access to AI resources, and the reproduction of gendered stereotypes are particularly salient. At the same time, the theme highlights pathways for reform through inclusive leadership, structural change, and the integration of gender-sensitive policies. When combined, these themes show an increasing understanding of the complex role AI plays in promoting gender equality. It extends beyond technical capabilities to include institutional readiness, governance reform, and cultural transformation. By mapping these thematic clusters, this study provides a structured overview of how AI adoption is currently conceptualized in the literature and offers a foundation for developing an integrative framework that links technological tools, institutional mechanisms, and equity outcomes in higher education. The analysis of thematic keywords highlights three interconnected domains: AI Capabilities and Tools, Empowerment and Support Mechanisms, and Gender Equality and Institutional Impact that together shape the role of AI in academia. The first theme emphasises technological opportunities and risks, with keywords such as AI tools, pedagogical integration, assessment tool, bias, and fairness reflecting both innovation and concerns over equity. The second theme focuses on institutional enablers, where keywords like leadership, empowerment, capacity building, governance, policymaking, and ethics point to the importance of supportive structures that allow women to benefit fully from AI. The third theme addresses systemic reform, with keywords including institutional culture, equity, access, gender bias, and challenges, highlighting the need for accountability and long-term transformation. Together, the themes show that AI's effectiveness in advancing gender equality depends not only on its technical capabilities but also on empowerment strategies and institutional governance that ensure fairness, inclusion, and sustainable impact.

**Table 2.** Analysis of Thematic Keywords and Sub-theme

| Main Theme | Keywords | Sub-theme | Number of Keywords |
|---|---|---|---|
| AI Capabilities and Tools | AI Tools, Pedagogical integration, AI in education, Assessment tool, Bias, Bias in LLMs, Fairness, Gender, Gender equity, Gender differences, Inclusion | Intelligent Tutoring, Intelligent Tutee, AI-Based Policy Advisors, Generative AI | 11 |
| Empowerment and Support Mechanisms | Institutional dynamics, Leadership, Empowerment, Capacity building, Institutional readiness, Governance, Governance bias, Policymaking, Policy implications, Ethics | Capacity Building, Inclusive Governance, Work-Life Balance, Representation in Policy | 10 |
| Gender Equality and Institutional Impact | Institutional culture, Equity, Capacity building, Access, Bias origins, Governance, Leadership, Fairness, Content bias, Inclusion, Gender, Challenges, Gender bias | Equal Access, Bias Reduction, Cultural and Policy Shift, Enhanced Women's Leadership | 13 |

The analysis demonstrates that AI's contribution to gender equality depends not only on technological innovation but also on empowerment strategies and institutional reforms. The keyword analysis reveals that AI's role in advancing gender equality in academia lies at the intersection of technological capabilities, empowerment mechanisms, and institutional reform. Sustainable progress depends on integrating these themes to ensure AI-driven innovation translates into inclusive and equitable academic environments.

The sub-components of the framework were developed through a systematic thematic analysis of the extracted keywords. First, a pool of keywords was identified from the reviewed literature and documents, reflecting recurrent issues such as AI tools, pedagogical integration, bias, fairness, empowerment, governance, and leadership. These keywords were then clustered into groups of related concepts to highlight patterns and conceptual similarities. For example, terms such as AI in education, assessment tools, and pedagogical integration were grouped to form the sub-component Intelligent Tutor, while bias, fairness, and gender bias were clustered into the sub-component Bias Reduction. Similarly, keywords such as capacity building, empowerment, and readiness were abstracted into the sub-component Capacity Building, and those related to leadership, governance, and representation were synthesized into Inclusive Governance.

Through this process of clustering and abstraction, sub-components were distilled to capture the essence of each group of related keywords, ensuring that they represented a coherent and meaningful construct. Finally, these sub-components were organised under the three overarching themes of the framework. The theme AI Capabilities and Tools encompassed sub-

components such as Intelligent Tutor, Intelligent Tutee, AI-based Policy Advisors, and Generative AI. The theme Empowerment and Support Mechanisms included Capacity Building, Inclusive Governance, Work-Life Balance, and Representation in Policy. The theme Gender Equality and Institutional Impact integrated Equal Access, Bias Reduction, Cultural and Policy Shifts, and Enhanced Women's Leadership. This analytic process demonstrates how the sub-components were not derived arbitrarily, but instead were systematically generated through the identification of patterns across related keywords, thereby grounding the framework in empirical evidence and thematic coherence.

*AI Capabilities and Tools*

An analysis of 11 articles highlights that AI tools, when strategically integrated into higher education, can serve as powerful enablers of gender equality and women's empowerment. One key capability lies in their potential to enhance awareness, learning, and digital literacy. This aligns with the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT), which emphasize perceptions of usefulness, ease of use, and social influence in shaping adoption. For instance, Acosta-Enriquez et al. (2024) applied UTAUT2 to identify factors influencing AI uptake in academia, while Ahmad et al. (2024) found that awareness, perceived benefits, and satisfaction strongly affect engagement. Similarly, Shah (2024) stressed that digital literacy enables women to actively shape, rather than passively consume, AI applications. In Malaysia, Mat Yusoff et al. (2025) demonstrated that inclusive pedagogical integration of AI enhances student engagement and readiness, though gender-based gaps in access and skills persist. At the same time, a critical challenge lies in AI's capacity to perpetuate bias. Cowan et al. (2024) and Maurat et al.(2024) reported gendered disadvantages in AI-supported teaching and assessment, while UNESCO (2019) cautioned that unregulated AI risks reinforcing inequities. Liu and Murphy (2022) proposed trustworthy AI frameworks, and Albuquerque et al. (2024) showed that large language models can help detect bias if combined with human oversight and ethical safeguards. Another theme concerns gendered patterns of AI use. Møgelvang (2024) observed differences in frequency, purpose, and confidence between male and female students, suggesting that targeted support is essential to ensure equitable benefits. Bulathwela (2024) similarly warned against techno-solutionism, arguing that AI alone cannot democratize education without addressing structural inequities. Finally, AI offers pedagogical pathways for empowerment. Hwang et al. (2020) outlined the Intelligent Tutor and Intelligent Tutee models: the former provides adaptive teaching, feedback, and monitoring to close achievement gaps, while the latter fosters agency and confidence by

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positioning students as teachers of AI. For women in underrepresented fields, these models can encourage participation and critical engagement with technology. Current research demonstrates AI's dual potential: it can foster empowerment by enhancing digital literacy, inclusivity, and agency, yet risks reproducing gendered inequities if adoption is uncritical. A notable shortcoming of existing studies is their limited theoretical integration and fragmented treatment of gendered experiences. This framework advances the field by linking technology adoption models, feminist perspectives, and organizational change theory, providing a holistic lens to assess both opportunities and risks. Rather than treating AI as a neutral tool, it positions AI capabilities within broader structures of power, pedagogy, and institutional transformation clarifying how equity outcomes can be systematically achieved.

*Empowerment and Support Mechanisms*

All of these studies point to the need for deliberate alignment of AI's capabilities from identifying bias and personalising learning to promoting equitable access with the broader goals of gender equality. This dimension is informed by feminist theory, which interrogates how power, agency, and gender norms shape women's participation in academia. Feminist perspectives emphasize that empowerment requires more than access to AI tools; it also depends on policies, leadership opportunities, and institutional practices that dismantle systemic hierarchies. As El Morr (2024) argues, feminist critiques are essential for uncovering algorithmic bias and ensuring AI adoption is embedded in struggles for equity and inclusion. Accordingly, the proposed conceptual framework views AI not as a neutral add-on, but as an active force in reimagining academia as an inclusive ecosystem. An analysis of nine studies underscores that empowerment through AI in higher education is inseparable from robust support mechanisms. Kalim et al. (2025) highlight barriers limiting women's participation in AI policy-making across Asia, while Mahmood et al. (2023) demonstrate how organizational culture, access to training, and technological readiness shape women's leadership opportunities in the UAE. Other studies point to AI's potential to support professional growth and improve work-life balance and offer adaptive mentoring through intelligent learning partners (Ebrahimi et al., 2024; Mehrunisa et al., 2024). Yet, as Rana et al. (2024) note, trust, privacy, and institutional readiness remain prerequisites for equitable AI integration, particularly in resource-constrained settings. Emerging applications, such as AI-based policymaking advisors, illustrate the potential for inclusive governance, though Voutyrako and Skordoulis (2025) caution that algorithmic governance may reproduce biases if not ethically designed. While the literature highlights both opportunities and risks, its limitations are clear.

Much of the research documents individual or institutional benefits without theorizing how empowerment unfolds across intersecting cultural, organizational, and technological domains. Ethical principles such as transparency and accountability are frequently noted (Roumate, 2023), but few studies embed these within a systematic framework of institutional change. This review advances knowledge by integrating feminist theory with organizational change literature, showing that AI can only empower women when coupled with supportive governance structures, cultural transformation, and intentional capacity building. The framework moves beyond fragmented accounts to position AI as a lever for reconfiguring power relations in academia, ensuring that women are not just users of AI, but active shapers of its future in higher education.

*Gender Equality and Institutional Impact*

The third component analysed ten studies linking AI adoption in higher education to institutional culture, governance, and gender equity dynamics. This theme resonates strongly with organizational change literature, which emphasizes that lasting transformation requires governance reform, cultural shifts, and an institution-wide sense of urgency (Cady et al., 2014). From this perspective, the long-term impact of AI on gender equality depends not only on the tools themselves but on how higher education institutions adapt structurally, foster inclusive leadership, and embed equity principles into governance systems. The reviewed studies highlight that institutional culture and leadership approaches strongly mediate AI's equity outcomes. Helmiatin et al. (2024) show that institutional attitudes shape inclusivity in Indonesian universities, while Kumar et al. (2022) caution that AI and robotics may simultaneously expand and restrict women's opportunities in developing contexts. At the same time, systemic bias remains a persistent challenge: Leavy (2018) and Kautsar et al. (2023) demonstrate how algorithmic training data and classroom practices can reinforce gender stereotypes, while Chauhan and Kaur (2022) frame algorithmic bias as a threat to human rights. Leadership and governance emerge as critical leverage points. Quaquebeke et al. (2023) and Najafi et al. (2025) argue that digital leadership can advance women's participation if supported by inclusive strategies, while Ehlers (2020) stresses aligning innovation with equity goals. Complementary work highlights the importance of fairness in marginalized contexts (Srinate et al., 2025) and the need for structural reforms beyond access, such as affirmative action, mentorship, and gender-sensitive pedagogy (Moges, 2019).

While these findings illustrate both risks and opportunities, the literature remains fragmented and largely descriptive. Most studies document how AI intersects with gender equality but stop short of theorizing the institutional mechanisms through which transformation occurs. There is

limited exploration of intersectionality (how gender interacts with class, race, or geography), or of how equity can be embedded into algorithm design, governance structures, and accountability systems. Ethical principles such as transparency, fairness, and inclusivity are widely noted, but rarely operationalized in a way that connects technology adoption with organizational transformation. The proposed conceptual framework advances this body of knowledge by bringing together feminist theory, technology adoption models, and organizational change perspectives. It reframes AI adoption as a driver of systemic reform, where governance, leadership, and policy are as central as technological design. This framework highlights that AI must not only widen access but also ensure equality of outcomes through equity-based HR systems, gender audits, and curriculum reform. In doing so, it bridges the current gap between fragmented, case-based insights and a holistic approach to institutional change, positioning AI as both a potential disruptor of bias and a catalyst for reconfiguring power relations in academia.

**Conceptual Framework**

This conceptual framework shows how the roles of AI in higher education can influence gender equality and women's empowerment in academia. Based on the three main identified components. Figure 2 illustrates the role of AI in advancing gender equality and women's empowerment in academia. The framework is organized into three components : (1) Pathways, representing the key areas through which AI contributes to change; (2) Measurable Indicators, outlining how progress can be assessed; and (3) Application Scenarios, highlighting practical implementations in academic contexts. This framework illustrates the interconnected pathways through which AI capabilities and tools can drive gender equality and women's empowerment in higher education, mediated by empowerment and support mechanisms and ultimately influencing institutional and societal impacts. The conceptual framework delineates the pathways through which Artificial Intelligence (AI) can advance gender equality and women's empowerment in academia. It integrates three interdependent components: (1) AI Capabilities and Tools, (2) Empowerment and Support Mechanisms, and (3) Gender Equality and Institutional Impact while embedding pathways, measurable indicators, and application scenarios that operationalise the linkages.

At the foundational level, AI capabilities and tools such as intelligent tutoring systems, intelligent tutees, generative AI, and AI-based policy advisors constitute the enabling infrastructure for academic innovation. The AI capabilities and tools component represents an enabling foundation of the framework, presenting the technological and functional features that AI brings into the educational and policy ecosystem. The sub-components include Intelligent Tutor and Intelligent Tutee, which are AI-driven platforms that act

as tutors, tutees, or collaborative learning partners (Hwang et al., 2020), providing adaptive learning, feedback, and mentoring opportunities. These technologies have the potential to facilitate personalized learning, automate decision-making, and provide data-driven insights for policy design and institutional governance. The integration of these capabilities is mediated through pathways, namely, access and participation, equity in teaching and learning, governance and policy, and capacity building and inclusion. These pathways function as the conduits that align AI deployment with equity-oriented objectives, ensuring that technological advancement is not divorced from the normative imperative of inclusivity. Building upon this foundation, the second component, empowerment and support mechanisms, captures the processes through which AI contributes to women's advancement in higher education.

These include capacity building initiatives, inclusive governance structures, work–life balance facilitation, and representation in policy-making. This component emphasises how AI can both dismantle systemic barriers and enhance institutional readiness to support women scholars and educators. The framework also embeds measurable indicators to provide an empirical basis for evaluation. Indicators such as representation in leadership and faculty roles, enrollment of women in AI and technology programs, narrowing of gender pay gaps, parity in promotion rates, improvements in digital literacy and AI training outcomes, bias detection and correction within systems, and women's authorship and access to research grants serve as benchmarks for assessing institutional progress and policy effectiveness. Complementing these are application scenarios, which translate conceptual pathways into tangible practices. Examples include AI-powered learning platforms, bias-free automated assessments, equity monitoring dashboards, AI-driven mentorship and leadership training, peer-review and evaluation tools, and AI-supported bias detection in hiring and publishing processes. These scenarios demonstrate the multiplicity of contexts in which AI can be mobilized to redress inequities in academic environments.

Finally, the third component, gender equality and institutional impact, represents the desired outcomes of this integration. The phase reflects the end-goal of these interactions, a more equitable and inclusive academic environment. These include equal access to academic opportunities, reduction of systemic and algorithmic bias, cultural and policy transformations toward inclusivity, and enhanced women's leadership across institutional hierarchies. The first sub-component is related to equal access to academic resources, promotions, and leadership roles as suggested by Moges (2019). Collectively, these impacts highlight the transformative potential of AI when embedded within equity-oriented governance frameworks. The framework demonstrates a progressive flow from AI capabilities to empowerment mechanisms and,

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finally, to institutional outcomes, with pathways, indicators, and scenarios providing the critical linkages for conceptual clarity and empirical validation.
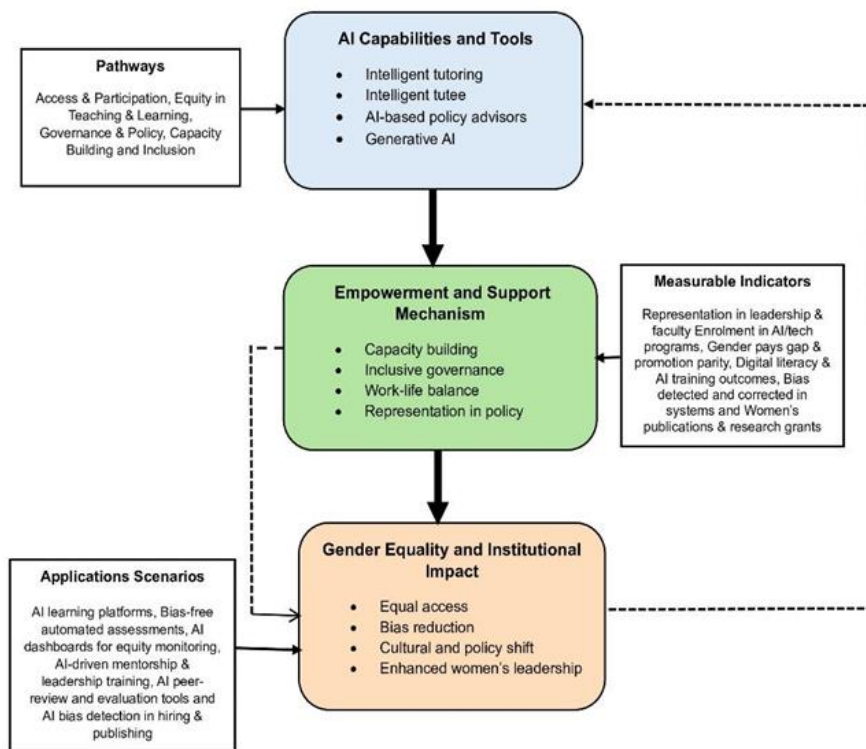


**Figure 2.** Conceptual Framework of the Role of Artificial Intelligence (AI) in Advancing Gender Equality and Women's Empowerment in Academia

In sum, this conceptual framework illustrates how AI, when strategically deployed, can serve as both a technological enabler and a social catalyst for advancing gender equality and women's empowerment in academia. By linking AI capabilities and tools with empowerment and support mechanisms, and ultimately leading to institutional impact, the model highlights the pathways through which equity can be embedded into higher education systems. The inclusion of measurable indicators ensures that progress is evidence-based, while application scenarios demonstrate practical opportunities for implementation. The framework underscores that the integration of AI in academia must be guided by inclusivity, governance, and accountability if it is to achieve lasting cultural and institutional transformation in favor of gender equity. Finally, the framework includes Sustainable Development Goals alignment to enhance women's leadership by ensuring AI implementation supports global equity and education goals (SDG 4 & 5).

## Research Implications

Like other notable and remarkable studies conducted by other researchers, this study also has its own significance, which made the need to carry out this study very relevant. The discussion surrounding the framework's research implications reveals a critical, multi-faceted perspective on using AI for gender equality. While the model optimistically links AI tools to institutional change, it prompts a deeper conversation about the inherent promise and peril of these technologies. Research must not only validate the effectiveness of algorithms in reducing bias but also critically examine their potential to inadvertently perpetuate it, emphasizing the need for robust ethical oversight. Furthermore, the framework's success pivots on a crucial middle layer of Empowerment and Support Mechanisms, underscoring that AI is not a standalone solution but a tool that must be carefully integrated into a supportive socio-technical system designed with end-users in mind. This leads to the most significant challenge: achieving true institutional and cultural change, which requires a focus beyond simple metrics to explore how technology can genuinely shift norms and behaviors. Finally, any research must be mindful of global context and equity, ensuring that these AI-driven interventions are adaptable, accessible, and do not inadvertently widen existing inequalities across different societies and economies.

## Conclusion

The literature review of 30 articles shows that the role of AI in promoting gender equality and women's empowerment among academia is greatly influenced by AI capabilities and tools, empowerment and support mechanisms, and gender equality and institutional impact components. The proposed framework integrates AI Capabilities and Tools, Empowerment and Support Mechanisms, and Gender Equality and Institutional Impact to guide the equitable adoption of AI in higher education. By combining intelligent tutors and intelligent tutees, AI-based policy advisors, and bias-detection systems with inclusive governance and representation policies, the model highlights how technology and institutional culture can reinforce each other in promoting women's participation and leadership. The framework's cyclical structure emphasises that advancements in AI must be matched with empowerment initiatives and fair governance to achieve sustainable gender equality. This approach offers a foundation for developing AI strategies that are both technologically robust and socially inclusive. Hence, this framework not only highlights how AI can support gender equality in higher education but also emphasises co-evolution as gender equality improves; it enhances AI tools' inclusivity and effectiveness, creating a virtuous cycle of empowerment and institutional transformation. To harness AI for gender equality in academia, researchers should develop robust, intersectional indicators and

apply diverse methodological approaches to assess impact. Policymakers need to mandate transparent audits, establish ethical data governance, fund equity-focused innovations, and create accountability mechanisms for AI misuse. Academic institutions should adopt AI responsibly by integrating bias-aware tools, investing in staff training, supporting women's leadership in AI, and embedding continuous monitoring of gender outcomes. Collectively, these actions ensure that AI not only enhances institutional efficiency but also actively contributes to empowerment, fairness, and the creation of more inclusive academic environments.

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# The Sasanian Simorgh and Its Reflections in Islamic and Byzantine Art

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## Abstract

The Simorgh, a prominent composite creature in ancient Iranian mythology and art, achieved its most stylized and symbolic form during the Sasanian period. A mythological hybrid with canine or leonine heads, eagle wings, scaled bodies, and peacock-like tails, it became a key motif in Sasanian luxury arts. This study introduces a new typology of the Sasanian Simorgh based on a comparative formal analysis of its visual variations in silk textiles, silverware, and architectural ornamentation. Four main morphological groups are identified, each defined by distinctive tail structures and compositional elements. Employing Panofsky's iconological method in conjunction with the theories of Hans Belting and Michael Baxandall on visual transmission, the research explores how the Simorgh motif was recontextualized in Islamic and Byzantine art. The findings demonstrate how the proposed typology enhances our understanding of the Simorgh's visual transmission across cultural and temporal boundaries, revealing consistent patterns of adaptation and transformation in Islamic and Byzantine art. This typological framework thus contributes to broader discussions on image circulation, visual hybridity, and cultural exchange in Late Antique and Byzantine visual cultures.

**Keywords:** Sasanian Simorgh, typology, visual transmission, Islamic art, Byzantine art

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## Introduction

The art of the Sasanian Empire (224–651 CE) stands out in the visual culture of Late Antiquity for its courtly luxury and symbolic richness. Among its most compelling elements are mythical hybrid creatures, which conveyed messages of dynastic power, cosmic order, and legitimacy. One of the most distinctive of these beings is the Simorgh, a composite creature that typically features a lion's or dog's head, eagle wings, and a peacock-like tail.

While the Simorgh has been frequently discussed in Persian epic literature, particularly in post-Sasanian narratives, its visual typology within Sasanian art remains insufficiently studied. Despite its recurring presence in Sasanian textiles, silverware, and architectural ornamentation, no systematic classification of its visual variations has yet been established. The differences in tail design and body form across media suggest multiple iconographic types that merit closer analysis. This motif underwent a number of transformations as it traveled beyond Iran through trade, diplomacy, and cultural exchange, which shaped its appearance in Islamic, Byzantine, and even Western medieval art.

This study introduces a new typology of the Sasanian Simorgh based on visual analysis of preserved artworks, including textiles, metalwork, and architectural elements. It also investigates the symbolic functions and cross-cultural reconfigurations of the motif, with particular focus on its reception and reinterpretation in Islamic and Byzantine contexts.

By combining formal classification with a study of visual transmission, this research sheds light on hybrid iconography in Late Antique and medieval artistic traditions. It also highlights the Sasanian Empire's mediating role as a cultural bridge between East and West, contributing to broader debates on image circulation and the political significance of hybrid motifs in imperial art.

## Theoretical Framework

This study employs an interdisciplinary framework that integrates visual typology, iconographic interpretation, and cross-cultural analysis. It aims to examine the Simorgh as both an artistic form and a carrier of cultural meaning.

Comparative visual analysis is used to apply a typological approach to Simorgh representations, which are grouped by recurring formal features, such as tail configuration, wings, and head type, across various media, including textiles, metalwork, and architectural decoration.

The methodology is informed by Erwin Panofsky's three-tiered iconological model: pre-iconographical description, iconographical identification, and iconological interpretation (Panofsky, 1955). This structure

enables the study to move beyond surface analysis and address the symbolic, religious, and political meanings embedded in the Simorgh motif.

To explore the motif's migration beyond Sasanian Iran, the research engages with theories of transcultural visuality and cultural transfer, particularly the perspectives of Hans Belting on image circulation (Belting, 1994), and Michael Baxandall's concept of the period eye and visual culture (Baxandall, 1985).

These approaches help to frame the Simorgh not only as a symbol but also as a visual motif that can be reshaped to suit the artistic styles and cultural values of Islamic, Byzantine, and Christian contexts.

Further, post-structuralist theories of hybridity, particularly those advanced by Homi Bhabha (Bhabha, 1994), inform this study's interpretation of the Simorgh as a dynamic hybrid construct integrating mythology, authority, and cultural signification. Its evolving forms across different imperial contexts reflect both its symbolic resilience and its capacity for transformation within courtly, religious, and popular visual cultures.

By combining typological analysis with iconographic and transcultural approaches, this framework enables a comprehensive examination of the Simorgh as both a formal artistic entity and a cross-cultural signifier with a sustained transhistorical presence.

**Literature Review**

While the Simorgh has been extensively examined in Persian literary and mythological contexts, its role as a visual and iconographic motif in Sasanian art has received comparatively limited scholarly attention. Existing studies on Sasanian iconography tend to focus on royal imagery, hunting scenes, and Zoroastrian symbolism, often relegating hybrid creatures like the Simorgh to the realm of decorative or marginal motifs. Nevertheless, several foundational works provide critical groundwork for the present investigation.

One of the earliest systematic contributions to the study of Sasanian visual culture is Kurt Erdmann's analysis of Persian textiles. The author highlighted the continuity of Sasanian motifs, including mythical hybrids, such as the Simorgh, in later Islamic and Byzantine textiles (Erdmann, 1957). His research demonstrated the long-lasting impact of Sasanian imagery through processes of visual transmission.

Similarly, Ernst Herzfeld and Roman Ghirshman made important strides in classifying Sasanian silverware and architectural reliefs. While they acknowledged the presence and artistic value of hybrid creatures, their analyses did not provide detailed typological frameworks (Herzfeld, 1941; Ghirshman, 1962).

More recently, the exhibition catalog Les Perses Sassanides offered a broader art-historical perspective on Sasanian aesthetics and their enduring

legacy (Demange, 2006). By emphasizing luxury objects such as silver plates and silk textiles, the catalog illustrated how Sasanian motifs spread beyond the empire's borders. While it acknowledged the reuse and reinterpretation of such imagery in early Islamic, Armenian, and Byzantine contexts, it did not provide a focused analysis of the Simorgh.

From a theoretical standpoint, Jurgis Baltrušaitis examined the migration of hybrid and monstrous imagery across cultural boundaries, particularly within Western medieval art (Baltrušaitis, 1981). His insights are especially relevant for understanding the absorption and transformation of Sasanian forms in Christian visual traditions. Similarly, Oleg Grabar investigated the adaptation of pre-Islamic motifs in Islamic art, emphasizing the persistence and recontextualization of Iranian elements (Grabar, 1992).

Despite these valuable contributions, a notable gap remains in the literature concerning the morphological classification of the Simorgh within Sasanian art. Although its symbolic associations are often mentioned in mythological discourse, its visual evolution, typological diversity, and transcultural transmission have not been systematically analyzed. This study seeks to address that lacuna by combining a typological investigation of the Simorgh's iconography with a contextual exploration of its dissemination across artistic and cultural boundaries.

**Methodology**

This study examines Sasanian artworks, including textiles, metalware, and architectural ornaments, that feature the Simorgh motif. Through the identification of recurring morphological elements, particularly in tail design and body composition, the research establishes a four-part typology. A comparative analysis with Byzantine and Islamic visual materials further illuminates patterns of transmission and reinterpretation. By integrating formal typological analysis with iconographic interpretation, the study situates the Simorgh's evolution within a broader transcultural framework, highlighting its shifting symbolic functions across different artistic and cultural systems.

**Sasanian motif migration**

Numerous objects, textiles, and reliefs depict the Sasanian Simorgh, reflecting its prominent role in the empire's decorative repertoire. Sasanian motifs, particularly those found on textiles, played a crucial role in shaping medieval visual culture. Following the fall of the Sasanian Empire and the rise of the Umayyad Caliphate, many regional workshops continued to employ Sasanian designs under the new Islamic rule. Through extensive trade networks and cultural exchanges between East and West, Sasanian artistic forms exerted lasting influence on contemporary and later civilizations,

including Islamic, Byzantine, and medieval Christian art. These motifs persisted well beyond the empire's collapse, often traveling through intermediary regions such as Armenia, a territory alternately ruled by the Sasanians and Byzantines, which facilitated their transmission into Christian artistic traditions. As noted by Demange, "In a world with close cultural connections from the Mediterranean to the Pacific, Iran served as a key intermediary between the West and Asia, dominating the Far East and the major spice and silk routes." Sasanian silk, in particular, gained considerable international prominence and influence during this period. The imitation and reproduction of Sasanian silverware also continued for at least a century after the empire's demise. (Demange, 2006)

Metalware, especially silver vessels, represents one of the most distinctive and refined expressions of Sasanian art. Lavishly decorated cisterns, vases, and cups exemplify the luxurious aesthetics of the Sasanian court. Among these, silver trays are particularly significant, as they feature the most intricate designs and iconographic content, serving as key artifacts for understanding Sasanian visual culture (Fray, 1996).

Distinguishing between late Sasanian and early Islamic-period vessels is often challenging, as many continued to be used and circulated long after their production. In some cases, these artifacts were exchanged as luxury diplomatic gifts even centuries after their manufacture. During the Crusades (11th–12th centuries CE), significant quantities of Sasanian silk textiles reached Western Europe through the trade in sacred objects.

These richly woven fabrics were often repurposed to enshroud the relics of saints, attesting to their perceived sanctity and value. As noted by Scarce, the prestige of Iranian textiles had already been firmly established during the Sasanian period through long-standing trade relations with Mediterranean polities. (Scarce, 2003).

Although the fall of the Sasanian dynasty brought an end to the large royal ateliers, smaller regional and provincial workshops gradually emerged. These workshops continued to produce silverware that imitated classical Sasanian designs, ensuring the persistence of the visual language well into the Islamic period (Demange, 2006).

During the 12th and 13th centuries, Syrian warehouses served as key redistribution hubs, receiving goods from regional production centers in Baghdad, Mosul, and Nusaybin. These products, including locally manufactured silks, were exported alongside Syrian textiles, facilitating the diffusion of Eastern motifs across the Mediterranean. As Ebersolt observed, "*Islam, which introduced many geometric, heraldic, abstract, and monster motifs into Roman art, left its mark on Western art. The connection between East and West was never broken in the 13th century and beyond*" (Ebersolt, 1929). This sustained interaction between East and West was reinforced

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through trade, pilgrimage, and the Crusades, particularly along the coastal regions of the Mediterranean (Baltrušaitis, 1981).

Several major centers of textile production are well documented in historical sources. Mosul, for example, was widely celebrated for its luxurious silk and gold-thread fabrics, which Marco Polo famously praised for their exquisite craftsmanship. In Baghdad, silk textiles were frequently adorned with small sculptural figures and ornamental scenes, and they were reportedly worn by Hulagu Khan and his court after the conquest of Syria. Damascus, meanwhile, gained renown for its production of damask fabrics, which often featured decorative motifs of Persian origin or influence (Demange, 2006).

Iranian artisans were particularly skilled in the manufacture of fine silk textiles. A remarkable example of the Western reception of these luxury fabrics appears in a painting by Broederlam, an artist active in the late 14th and early 15th centuries. In one scene, a figure is depicted wearing a sumptuous Persian textile decorated with Chinese-style phoenix motifs (Baltrušaitis, 1981; Fig. 1).

In terms of silver and gilded vessels, Iran's artistic influence on Western medieval art was more profound than that of Syria, Egypt, or other neighboring cultures (Grabar, 1967). During the early Islamic centuries, numerous Sasanian motifs were absorbed into the emerging Islamic visual language. These included emblematic designs such as the Tree of Life, hybrid and mythical creatures (griffins, dragons, and Simorghs), winged horses, and animal combat scenes within circular pearl borders. Among these motifs, the Simorgh emerged as one of the most iconic and enduring symbols. The Simorgh, also known as Senmurv or Sen Mrū and closely related to Sina Mrū in Pazand, is a legendary and mythological bird whose name is derived from the Avestan term mərəyō saēnō "Saena bird". In Sasanian visual culture, the Simorgh appears frequently on silver vessels, bowls, water jugs, cylinder seals, and luxury textiles, as well as in later Byzantine and medieval artworks.

In silk textile decoration, as in many other refined Sasanian artifacts, both real and mythical animals, including the Simorgh, were prominently featured. These often appeared in dynamic compositions alongside creatures such as rams, dragons, ducks bearing royal ribbons (a symbol of sovereignty), winged horses, and roosters (see figs. 1 and 2).

A critical distinction must be drawn between the Simorgh of Sasanian art and the Simorgh of Persian literary tradition, especially as described in Ferdowsi's Shahnameh. While the former is often a stylized, heraldic image serving decorative or symbolic functions, the literary Simorgh embodies a deeply mythologized and spiritual character. According to the Shahnameh, Avesta, and Pahlavi texts, the Simorgh is a majestic, awe-inspiring creature. Its immense wings resemble a vast cloud heavy with mountain waters; its body features four wings on each side, each richly adorned in vibrant colors. With

eagle-like beaks, human-like faces, and the power to lift even an elephant, it earned the title "King of Birds" (Yahaghi, 1996). (Yahaghi, 1996).

In the narratives of Shahnameh, the Simorgh is intimately associated with the legendary hero Rostam, serving as his protector and guardian (see fig. 2). Several ancient sources describe the Simorgh as harboring a profound enmity toward serpents and residing in a paradisiacal place rich in water. Its feathers are said to shimmer with a copper-like hue. Simorgh is considered a benevolent creature by nature and is believed to possess healing powers. Its wings are said to be capable of healing wounds and illnesses. This mythical bird is described as so ancient that it has witnessed the world's destruction and rebirth three times. For these vast ages, the Simorgh is believed to have acquired deep wisdom and universal knowledge (Simpson, 2011). When the Simorgh takes flight, the leaves of the Tree of Life are said to tremble, causing the seeds of its fruits to fall and scatter across the world. These seeds are believed to give rise to previously unknown plant species with healing properties capable of alleviating human suffering. The Simorgh is also associated with the Tree of Knowledge and Awareness, where it is said to nest. By flapping its wings, the bird spreads seeds from this sacred tree throughout the earth. In certain traditions, the Simorgh even acts as an aide to divine messengers, further emphasizing its spiritual role.

In the celebrated Sufi allegory Mantiq al-Tayr (The Conference of the Birds) by Attar of Neyshabur, the Simorgh is portrayed as the sovereign of all birds. According to one legend, the Simorgh lived within fire for 1,700 years before undergoing self-immolation. In other accounts, it is described as both immortal and eternal, residing in the Tree of Knowledge. This connection to rebirth and transcendence parallels the qualities often attributed to the phoenix (Talbot Rice, 2007).

As a result of their shared symbolic associations, the Simorgh and the phoenix are often identified with one another. Many Iranian paintings, especially from the post-Mongol period, depict the Simorgh in the form of the Chinese phoenix. Following the Mongol invasion and the subsequent influx of Chinese artistic influence into Iran, the iconography of the Simorgh increasingly adopted the aesthetic features of the *Fenghuang*, the mythical bird of Chinese tradition (see fig. 3). The phoenix is a radiant, mythical creature known for its long, colorful plumage and its cycle of death and rebirth. According to legend, after living for centuries, it builds a pyre, self-immolates, and is reborn from its ashes. In Chinese cosmology, the Fenghuang is considered the second among the four sacred creatures and symbolizes the harmonious balance between yin and yang (Julien, 1989).

The dissemination of Chinese visual forms and motifs across Asia and Europe intensified during the mid-13th century. In 1265, Hulagu Khan famously transported several Chinese artists and engineers to Iran, which

facilitated the transmission of Chinese artistic models into the Persian visual tradition (Bushell, 1910). This influence is particularly evident in the adoption of sophisticated painting techniques such as rich chiaroscuro, as well as in the increased representation of fantastical creatures like the classical dragon and phoenix (Baltrušaitis, 1981).

Over time, the Simorgh evolved to symbolize divinity and transcendence within Iranian culture. In later Persian literature, the bird is sometimes referred to as the Homa, a creature associated with divine favor and kingship. It is known in Arab traditions under the name Rukh, a colossal bird with two horns and four ridges along its back that is said to live in India (Mode, 1977). These overlapping representations underscore the fluidity of the Simorgh's identity and its adaptability across cultural and religious boundaries.

On the other hand, the Simorgh shares significant similarities with the Anqa of Arab folk literature. The Anqa is described as a colossal bird that existed prior to the creation of humankind and is often regarded as an analogue to the Simorgh (ibid.). In Persian representations, the Anqa is often depicted as a man with a human face (Stephenson, 1928). These comparative examples suggest that the Simorgh, as depicted in Persian mythology and popular literature, bears a greater resemblance to the Chinese Phoenix, the Rokh, and the Anqa than to the Sasanian version of the creature.

**The Sasanian Simorgh**

In Sasanian art, the Simorgh is represented as a composite mythical creature, typically combining anatomical elements from multiple animals. It is most commonly described as possessing the body and head of a dog, the forelegs of a lion, and the tail of a peacock. According to Mode, "the Simorgh that scatters seeds is a giant mythical Iranian bird symbolizing the unity of earth, air (sky), and water" (Mode, 1977).

This triadic symbolism is reflected in the creature's hybrid form: the dog-like head and body signify its terrestrial nature; the leonine (or occasionally amphibian) forelegs further emphasize its earthly association; the feathered wings embody the element of air; and the fish-like scales that cover parts of its body represent water. Thus, the Sasanian Simorgh visually encapsulates a cosmological harmony among the fundamental elements (Fig.7).

**The Composition of the Sasanian Simorgh**

As previously noted, the Sasanian Simorgh typically features a dog-like head, the forelegs of a lion, a body covered with fish-like scales, bird-like wings, and a peacock's tail. In Sasanian decorative arts, this fantastical hybrid motif is found frequently in textiles, metalwork, and architectural

ornamentation, such as in the sculptural reliefs at Taq-e Bostan in western Iran (Fig. 8), and even on the walls of a church in Armenia (Fig. 10).

From an alternative interpretive perspective, the Sasanian Simorgh may also be viewed as a stylized peacock with the head and forelimbs of a dog or lion. In certain historical sources, it is referred to as the "Simorgh-Peacock," a term that aptly captures the visual characteristics of the Sasanian representation. Among its anatomical features, the peacock tail stands out as particularly distinctive and symbolically potent, carrying broad significance across numerous artistic traditions. (Talbot Rice, 2007).

Across numerous cultures, the peacock serves as a potent symbol of paradise, immortality, and the soul's eternal journey. Its vibrant, iridescent feathers are frequently interpreted as metaphors for the richness, diversity, and unity of creation. In Islamic visual culture, the expansive and radiant peacock tail evokes notions of cosmic order and mirrors the immensity of the galaxy, thus rendering the bird an emblem of celestial harmony and spiritual beauty. Similarly, in Christian iconography, the peacock is associated with the starry heavens and the incorruptibility of the soul. The peacock, often depicted with a tail containing a hundred eyes, is commonly depicted standing beside the Tree of Life. In this context, the creature symbolizes the duality of human nature: the earthly and the spiritual, the visible and the hidden. It reflects the soul's awareness and its transcendental potential.

The Simorgh, closely related to the iconography of the peacock, is frequently placed within a circular decorative frame composed of various ornamental motifs (Fig. 7). These repeated geometric or floral elements reinforce the sense of cyclical movement and visual dynamism, symbolizing concepts such as the cosmos, the rhythm of life, vitality, and eternal recurrence. In certain depictions, the body or wings of the Simorgh extend slightly beyond the confines of the circular frame while remaining enclosed within it (Fig. 8). The slight compositional break enhances the tension between containment and transcendence, echoing the creature's liminal nature between earthly and celestial.

Such representations function as allegories of divinity and celestial forces, underscoring the profound symbolic association between the Simorgh and the sacred geometry of the circle. As previously noted, the Sasanian Simorgh is typically rendered as a composite creature, combining elements of a dog, a lion, and a bird. Among these features, particular emphasis is placed on the varying shapes and configurations of its peacock-like tail, which carries rich symbolic significance across cultural and artistic traditions.

**Results**
The visual analysis of Sasanian artworks featuring the Simorgh motif has resulted in the identification of four principal morphological types. These

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types are categorized based on tail structure, anatomical composition, and the medium in which they appear, namely, textiles, silverware, and architectural reliefs. This classification reveals discernible patterns of symbolic emphasis and regional variation, offering a more nuanced understanding of the Simorgh's role within the courtly visual language and its subsequent transcultural reinterpretations.

### Group I: Peacock Tail with Geometric Motifs

This type is characterized by a voluminous, upward-curving peacock tail adorned with repeating geometric patterns. The Simorgh is typically depicted with the head of a lion or dog, eagle-like wings, and a compact, circular body composition. Examples of this type appear in Sasanian silk textiles (Fig. 4), Byzantine adaptations (Fig. 5), and silver ewers (Fig. 7). Notably, this morphological variant exerted widespread influence on both Christian and Islamic visual traditions.

### Group II: Tail with Vegetal and Abstract Motifs

This group is distinguished by a peacock-like tail embellished with vegetal forms, floral buds, and abstract spiral patterns. The overall composition often includes ornamental extensions along the wings and torso, contributing to a more organic and fluid visual language. This style emphasizes decorative elegance and symbolic growth, as seen in a silver-gilt tray dated to the 7th century CE, which serves as a representative example (Fig. 18).

### Group III: Bird-like Simorgh with Spiral Beak

This type presents the Simorgh fully as a bird, resembling an eagle. It includes a rounded, spiral-shaped beak and a tail that mimics a crest. The decorations harmonize across the head, wings, and tail. The design often appears in ivory or reliefs (Fig. 19).

### Group IV: Feather-Shaped Tail Motifs

The most stylized group, featuring a tail made of repeated feather-like flames, sometimes combined with fish scales. The Simorgh is a hybrid creature that combines the characteristics of a lion, a dog, an eagle, and a peacock. It appears on late silver vessels and even Chinese Sui dynasty art (Figs. 20–22).

**Table 1:** Typology of the Sasanian Simorgh

| Group | Tail Type | Body & Head | Medium | Period / Location | Example (Fig.) |
|---|---|---|---|---|---|
| I | Peacock tail with geometric patterns | Dog/lion body, eagle wings, dog/lion head | Silk textile, silver | 6th–7th c. CE / Iran, Byzantium | Fig. 4, 5, 7 |
| II | Tail with vegetal and spiral motifs | Lion body, decorated with plant elements | Gilded tray | 7th c. CE / Iran | Fig. 18 |
| III | Spiral/crest-like bird tail | Fully avian, eagle beak | Ivory, relief carvings | Late Sasanian / Central Asia | Fig. 19 |
| IV | Flame-like feather tail | Hybrid: fish scales, eagle wings, dog/camel head | Silver vessel, Chinese ceramics | 7th–8th c. CE / Iran, China | Fig. 20–22 |

Typological classification of the Sasanian Simorgh based on morphological features, artistic medium, and geographical context

## Typology of the Sasanian Simorgh: Detailed Analysis
## The First Group: The Peacock Tail

Simorgh peacock tails appear in a variety of designs, each serving as a prototype and source of inspiration for subsequent generations of artists. Due to this diversity in tail depictions, the Sasanian Simorgh can be categorized into several primary groups. One prominent example is the peacock tail embroidered on Sasanian silk fabric (Fig. 4).

This motif traditionally combines the head of a dog, the body and paws of a lion, eagle-like wings, and a voluminous peacock tail. The tail is depicted as a rounded form richly adorned with geometric patterns, expanding upward to form a semicircular shape. Its surface is intricately covered with repeated geometric motifs. Notably, this particular depiction was faithfully replicated during the Byzantine period and appears embroidered on a Byzantine textile produced three centuries after its original creation in the Sasanian royal workshops (Fig. 5). This piece serves as a significant testament to the influence of Sasanian artistic conventions on Byzantine and Christian visual traditions. Additionally, this tail model recurs frequently in Sasanian Simorgh representations. For instance, a partially gilded silver abdani presents the Simorgh enclosed within a circular frame (Fig. 7), further illustrating the motif's continued popularity and symbolic resonance.

A notable feature in the design of this Simorgh is that its external form is not entirely circular, despite being placed within a circle. The end of its body, where the tail is located, is slightly elongated. However, the design of its tail follows the conventions of the first group. This characteristic can also be observed in several other representations of the Simorgh, where the peacock's tail deviates from the circular form. The influence of this group of Simorgh depictions was widespread, as it can be found across much of the civilized world of the time and beyond, including in Christian art.

As a mural motif for its interior walls, the Armenian Church adopted the Sasanian Simorgh motif, depicting four Simorghs each enclosed within a decorative circular frame (Figure 9). These Simorghs are arranged in pairs, positioned opposite one another, and stacked vertically. Although each Simorgh is depicted individually, together they form a cohesive, repeating pattern. Christian artists, particularly those involved in illustrating religious manuscripts and paintings, frequently incorporated Oriental motifs into their work. In some instances, these motifs were adopted in their original form, while in others, they were adapted to align with the artists' stylistic preferences or the thematic content of the religious texts.

For example, two scenes are presented: one shows an eagle hunting and lifting a gazelle, while the other depicts a Sasanian Simorgh (Fig. 10). This Simorgh is a highly faithful rendition of the original Sasanian motif, closely resembling those illustrated in Figures 7 and 8.

The imagery of the Sasanian Simorgh had a profound influence on Western religious art, particularly its distinctive upward-curving peacock-like tail, which extended its reach as far west as Spain. In this process of cultural transmission, Sasanian textiles played a pivotal role. Notably, several folios from the renowned religious manuscript collection *Beatus of Liébana* include a symbolic peacock motif. (Fig. 11).

Christian symbolism and allegory depict the cosmic battle between the forces of good and evil, culminating in God's victory over Satan at the end of time. This theme is frequently depicted in Christian art. Within this visual narrative, the peacock symbolizes Christ, who is destined to conquer the serpent, a representation of Satan and malevolence. The bird featured in the Beatus manuscript closely resembles a peacock, with its tail elegantly curled upward in a manner reminiscent of Sasanian gold and silver work as well as silk textiles. This visual style subsequently gained popularity in Islamic art as well. A notable example is a decorative frame housed in the Museum of Islamic Art in Cairo, which depicts two peacocks facing each other amid an elaborate arrangement of floral motifs. The design of their tails distinctly reflects the influence of the Sasanian aesthetic tradition (Fig. 12).

The motif of two peacocks facing one another, their tails raised and arranged in a semicircular form, reappears on a silk textile from the Almoravid period, dating to the first half of the 12th century (Al-Andalus, Spain). This textile, unearthed at the site of *Late San Geronás*, provides compelling evidence for the transmission of the Sasanian Simorgh's tail motif into Islamic visual culture and its subsequent diffusion into southwestern Europe, particularly the Iberian Peninsula.

In southern Italy, a carved horn-shaped object made from elephant ivory presents a similarly rich decorative program. The surface is densely adorned with vegetal scrolls and animal motifs, among which a peacock with

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an upward-curving tail stands out, remarkably reminiscent of the tail form seen in Sasanian representations of the Simorgh.

Further east, a textile fragment discovered in Astana (Kazakhstan) displays a pair of peacocks facing each other within a circular medallion framed by abstract ornamentation. The stylized treatment of the peacocks' tails and the compositional format strongly reflect Sasanian artistic conventions and their wide-reaching influence (Fig. 14).

In Iran, during the post-Sasanian period, particularly in the early Islamic centuries, a remarkable example of the continuity and adaptation of the Simorgh motif appears on a gilded silver octagonal tray dated to the 10th century (Fig. 15). There is a large Simorgh depiction prominently displayed in the tray's central field, which is considerably larger in scale than comparable representations on other objects, immediately catching the viewer's attention. The Simorgh is set within a circular medallion, itself surrounded by smaller circular motifs, in accordance with traditional Sasanian compositional schemes.

The surrounding area is filled with native plant designs, which frame the mythical bird in a lush, ornamental context. The tail of the Simorgh closely resembles that of a peacock: the feathers are layered in tiers, each adorned with stylized, feather-like decorations that culminate in a sharp, arrow-shaped tip. Notably, the tray presents two distinct images of the Simorgh. The primary, central figure appears within a fully circular composition and corresponds to the first morphological type (Group I), characterized by geometric organization and peacock-like tails. In contrast, the second, smaller depiction of the Simorgh, possibly a secondary decorative element, reveals a tail with feather-like ornamentation, indicating either a stylized variant or a transitional type between established morphological groups.

In Islamic literature and art, the peacock, especially its tail, has both aesthetic and symbolic significance. As a result, it frequently appears across various media, including manuscript illustrations, scientific, literary, and religious texts, as well as paintings from different periods. One notable example can be found in an illustration from the manuscript 'Ajā'ib al-Makhlūqāt wa Gharā'ib al-Mawjūdāt, which depicts a legendary creature (harpy) with the body of a bird, a human head, and a peacock's tail (Fig. 16). The design of this tail closely resembles that of the Sasanian Simorgh in certain motifs from the same period (see fig. 8).

Furthermore, in Islamic painting, the Prophet Muhammad's celestial steed, Buraq, is frequently portrayed with a tail inspired by the stylized peacock tail of the Sasanian Simorgh (Fig. 17; Ettinghausen et al., 2001).

In Islamic belief, Buraq is the celestial creature that transported the Prophet Muhammad (PBUH) during the Miʿrāj—his ascension to heaven. While the Bible contains no reference to such a creature, Islamic tradition

gradually developed a more detailed image of Buraq over time. To explain the miraculous speed with which the Prophet traveled from Earth to the heavens, Ibn al-Ashʿath (or Ibn al-Ashqāb) described Buraq as an animal with winged legs. In contrast, al-Ṭabarī, in his compilation of ḥadīths, refers to Buraq more simply as a horse. Other sources offer more elaborate depictions, describing Buraq as a luminous white creature, part donkey and part mule, with the face of a beautiful young woman, long ears, a thick mane, and a saddle and bridle embellished with precious stones and metals (Berti, 2000).

## The Second Group: Peacock Tail with Vegetal and Abstract Motifs

The second typological variant of the Simorgh closely resembles the first in overall composition; however, it is distinguished by the incorporation of vegetal and abstract decorative elements, particularly on its peacock-like tail. A silver-gilt tray dated to the 7th century CE presents one of the most imaginative and refined examples of this category (Fig. 18). The creature's tail is adorned with two bud-shaped vegetal motifs, each connected to the body through circular, spiral lines that terminate in additional floral elements. These ornamental features show a striking affinity with motifs found in Basque decorative traditions. Furthermore, similar vegetal designs appear across the wings and torso of the Simorgh, establishing a strong stylistic coherence throughout the composition. Additional embellishments are placed beneath the tail and along the lower body, contributing to the overall visual unity and ornamental sophistication of the design.

## The Third Group: Bird-like Simorgh with Spiral Beak and Harmonious Tail

The third typological group of the Simorgh diverges notably from the previous types by presenting the creature in a fully avian form. Initially, this version appears similar to an eagle. The head is embellished with curving motifs that extend into rounded, spiral-shaped beaks, reminiscent of a peacock's crest. These decorative patterns are distributed across three principal areas: the head, wings, and tail. A particular highlight is its tail, which is highly intricate and aesthetically refined. It maintains a stylistic coherence with the rest of the body, reinforcing the unity and elegance of the overall composition (Fig. 19).

## The Fourth Group: Feather-Shaped Tail Motifs

The fourth typological model is distinguished by a peacock-like tail composed of densely packed, feather-shaped motifs executed with remarkable delicacy. These motifs are rhythmically repeated, filling the tail's surface and evoking the visual effect of flickering flames or stylized fire (Fig. 20).

This feather-like pattern is arranged in a semi-circular form near the upper part of the creature's leg, precisely at the juncture where the mane meets the leg, and is further ornamented in that region. The Simorgh in this representation appears as a fully composite creature, integrating a dog's head, a lion's body and paws, eagle-like wings, a peacock's tail, and a surface patterned with fish-scale designs.

There is a similar treatment of the Simorgh's tail on an abdani (ritual vessel) from the seventh century CE, which is distinguished by its elongated peacock feathers (Fig. 21). In this version, the camel's head replaces the more typical dog's head, while the overall composition retains a circular structure. As in the preceding example, the feather-like motifs continue along the lower part of the mane and merge fluidly with the tail, reinforcing the harmonious integration of the design elements.

The motif of the Sasanian Simorgh also extended eastward, becoming assimilated into the artistic traditions of distant cultures. While local adaptations introduced distinct stylistic features, several Chinese artworks reflect the visual legacy of the Sasanian Simorgh.

A Sui dynasty pilgrimage bottle features a striking relief of the Simorgh. The creature stands (or walks) on two legs while holding a plant stem in its beak. The overall appearance of this animal is that of a bird, in particular, resembling an eagle, despite having two dog-like legs (Fig. 22). The design of its tail aligns it with this subgroup. Similarly, a depiction of the Simorgh engraved on a marble plaque from the Byzantine period also reflects characteristics consistent with this subgroup (Fig. 23).

**Conclusion**

This study has introduced a new typological framework for the Sasanian Simorgh, grounded in formal visual analysis and iconological methodology. Identifying four distinct morphological groups, distinguished primarily by differences in tail configuration, anatomical hybridity, and material context, the study contributes to our understanding of the Simorgh's iconography and its transcultural dissemination.

Beyond its role as a mythical hybrid creature, the Simorgh emerges as a cultural and symbolic agent, reflecting ideas of royal power, cosmic order, and visual hybridity. The motif's adaptation in Islamic and Byzantine art highlights the enduring visual memory and courtly exchanges that traversed imperial and religious boundaries, especially along the Silk Roads. This study thus contributes to broader scholarly debates surrounding the mobility of images, the visual grammar of hybridity, and the cross-cultural dynamics of Late Antiquity and the early medieval period.

Future research might expand this typological framework by conducting comparative studies of other composite creatures across cultures or examining the reception of the Simorgh in post-Islamic literary and artistic traditions. The approach proposed here invites further exploration into how visual forms convey meaning across religious, geographical, and temporal divides.

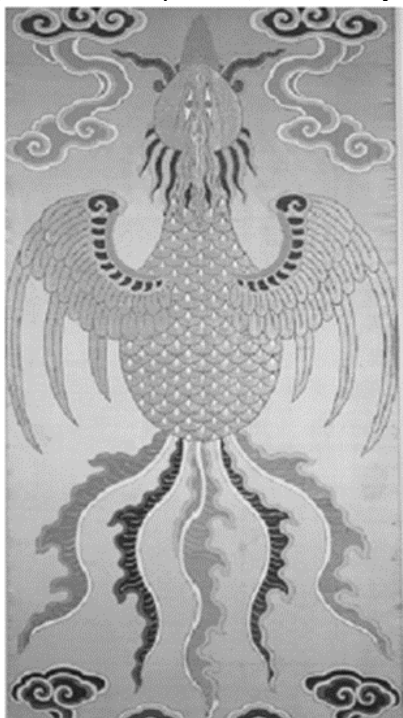**Fig. 1:** A Sasanian textile featuring a Chinese phoenix motif, attributed to Melchior Broederlam, 1398 AD, Museum of Fine Arts, Boston.
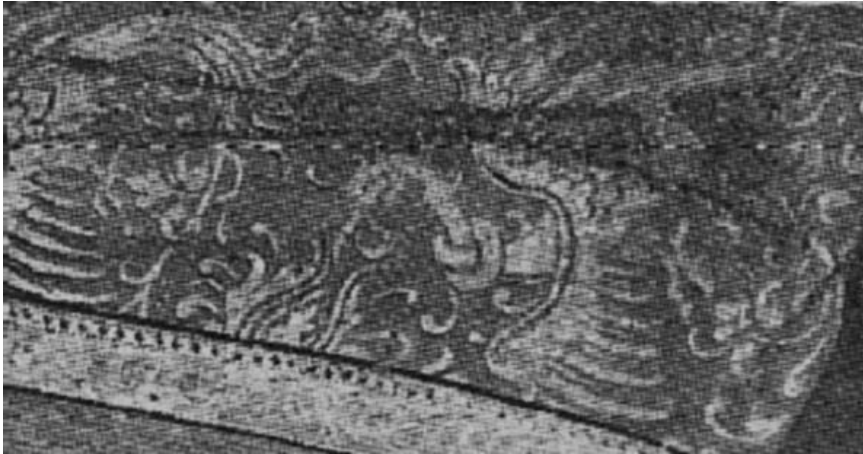


Source: (Baltrušaitis, 1981).

**Fig. 2:** Simorgh and Zal, a Safavid miniature illustration from the Shahnameh.



Source: (Ebersolt, 1929).

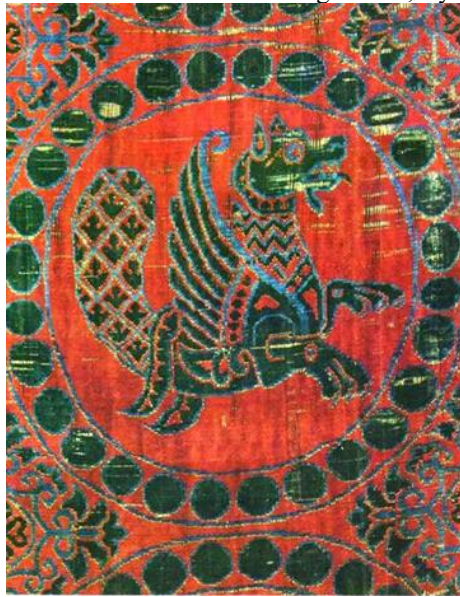**Fig. 3:** A Chinese phoenix, 17th century AD.

Source: (Bushell, 1910).

**Fig. 4:** Left side, silk textile featuring a Sasanian Simorgh motif, 6th-7th century CE.

Source: (Canepa, 2009).

**Fig. 5:** Right side, silk textile with a Sasanian Simorgh motif, Byzantine, 10th century CE.

Source: (Cooper Hewitt, Smithsonian Design Museum, New York).

**Fig. 6:** Relief carving, marble, peacocks symbolizing eternity and life, Hagia Sophia, 4th century CE, Iznik Museum.

Source: (Berti, 2000).

**Fig. 7:** Sasanian Simorgh, silver ewer with gold overlay, Sasanian, 6th century CE, height 32 cm, The State Hermitage Museum.



Source: (Mode, 1977).

**Fig. 8:** Sasanian royal attire with Simorgh motif, relief carving, Taq-e Bostan, 6th century CE.



Source: (Pop, 1959).

**Fig. 9:** Wall painting with Sasanian Simorgh imagery, Ani Tigran Honents Church.



Source: (Ghirshman, 1954).

**Fig. 10:** Sasanian Simorgh and an eagle hunting a gazelle, illustration from a Christian manuscript.

Source: (Baltrušaitis, 1981).

**Fig. 11:** Illustration, Beatus of Liébana, Beatus of Saint-Sever, 1060 CE.

Source: (Baltrušaitis, 1981).

**Fig. 12:** Panel with confronted peacocks, marble, Western Palace, Egypt, 10th-11th century CE, Museum of Islamic Art, Cairo.
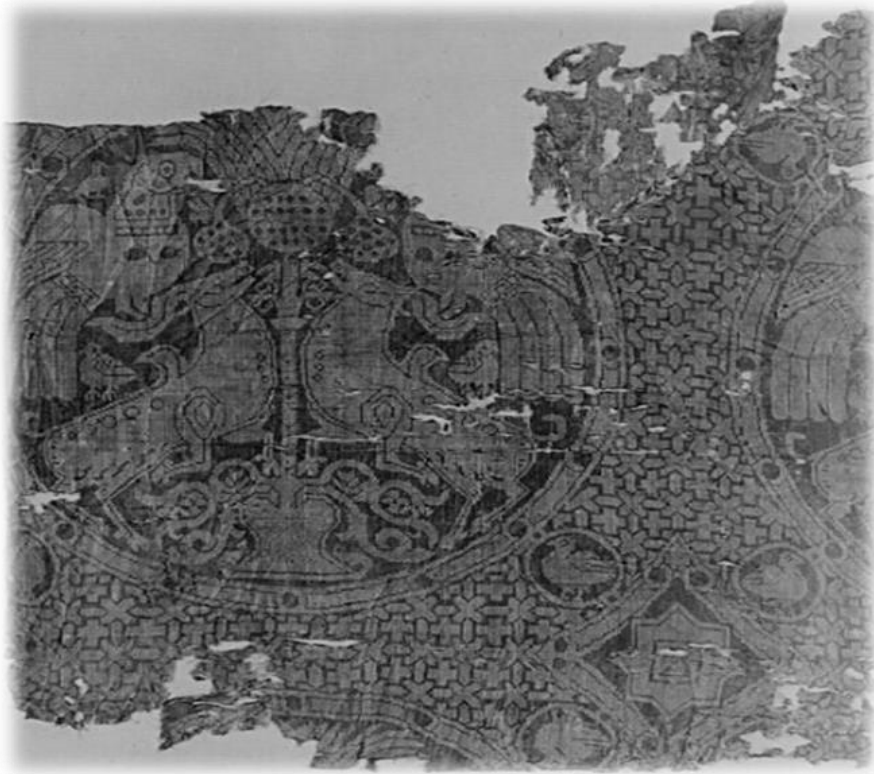


Source: (Cassous, 1977).

**Fig. 13:** Silk textile with confronted peacock motif, Al-Andalus, Spain, Almoravid period, first half of the 12th century CE.



Source: (Cassous, 1977; Hillenbrand, 1999).

**Fig. 14:** Silk textile with confronted Simorgh-peacock motifs within a decorative roundel, Astana, Kazakhstan, Sasanian copy.



Source: (Bier, 2008).

**Fig. 15:** Octagonal silver-gilt dish with Simorgh motif, Northwestern Iran, 10th century CE, Museum of Islamic Art, Berlin.



Source: (Pop, 1959).

**Fig. 16:** Eight celestial spheres, copy of "ʿAjāʾib al-makhlūqāt wa gharāʾib al-mawjūdāt" (The Wonders of Creation and the Oddities of Existence) by al-Qazwīnī (1238 CE), Mongol period, 17th century CE.



Source: (Talbot Rice, 2007)



**Fig. 17:** The Mi'raj (Ascension) of Prophet Muhammad (PBUH), Buraq with a peacock tail, Iranian miniature, 14th century CE, Bibliothèque nationale de France, Paris.

**Fig. 18:** Silver-gilt flat dish with a Sasanian Simorgh motif, 7th century CE, British Museum, London.



Source: (Grabar, 1980).

**Fig. 19:** Silver dish with a Sasanian Simorgh motif, 5th century CE, Reza Abbasid Museum.



Source: (Harper, 1978).

**Fig. 20:** Silver-gilt dish with a Simorgh motif, 8th century CE, The State Hermitage Museum.



Source: (Grabar, 1967).

**Fig. 21:** Bianhu-type pilgrim flask, China, Sui Dynasty, 6th-7th century CE, Berlin Museum.



Source: (Bushell, 1910).

**Fig. 22:** Silver-gilt ewer with a Simorgh motif and camel head, 7th-8th century CE, The State Hermitage Museum.



Source: (Pop, 1959).

**Fig. 23:** Plaque with a Sasanian Simorgh motif, 11th century CE, Constantinople, Musée du Moyen Âge, Paris.



Source: (Canepa, 2010).

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