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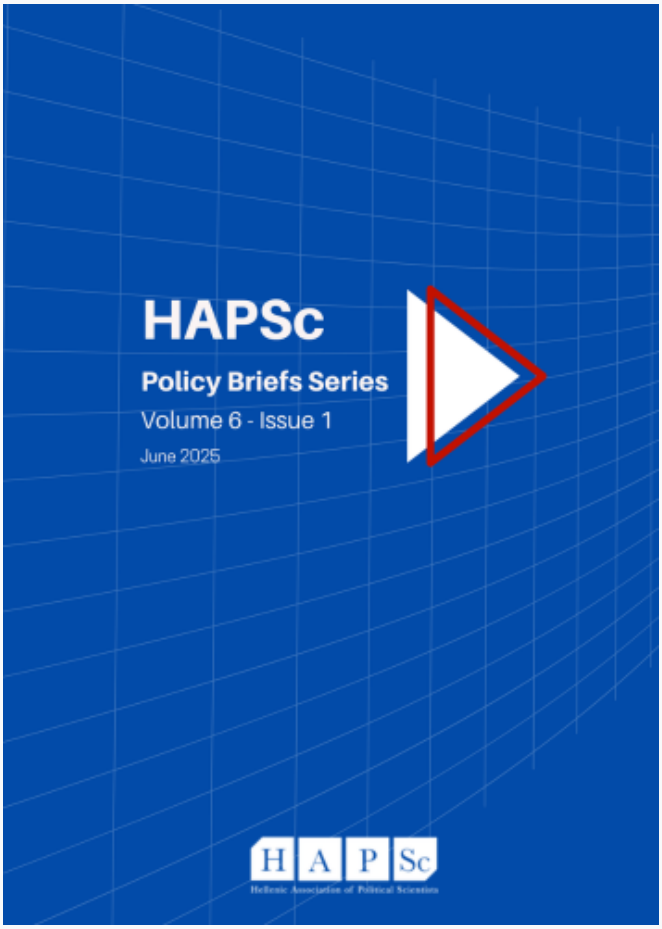

Interdisciplinarity, Collective Intelligence, and the Role of the Humanities and Social Sciences in Greece's Socioeconomic Development

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Interdisciplinarity, Collective Intelligence, and the Role of the Humanities and Social Sciences in Greece's Socioeconomic Development[1]

Stavros Gavroglou[2]

Abstract

This article explores the complex and underexamined relationship between the Humanities and Social Sciences (HSS) and Greece's economic and social development. Against a policy landscape dominated by a preference for Science, Technology, Engineering, and Mathematics (STEM), this article contends that the declining status of HSS in Greece is not an inevitable consequence of labour market trends, but rather a manifestation of a narrow policy focus. Using evidence from Greek and EU labour market data, this study highlights how the underutilization of high-skill labour, including but not limited to HSS graduates, reflects broader structural challenges within Greece's productive model. The article argues that interdisciplinarity and collective intelligence (two concepts where HSS have a comparative advantage) are indispensable to the transformation of the Greek economy. Through empirical evidence, comparative statistics, theoretical analysis, historical context, and cultural commentary, this contribution calls for a reinvigoration of HSS as a central pillar of sustainable and inclusive development in the era of technological complexity and artificial intelligence.

Keywords: Labour Market; Employment; Skills; Social Sciences; Greece.

Introduction

In the European Union and particularly in Greece, recent decades have seen an intensification of policy initiatives aimed at prioritizing STEM disciplines in education and workforce development strategies (e.g. Bacovic, Andrijasevic & Pejovic, 2022, Rambla & Alexiadou, 2024, Costello et al., 2020, Hogarth et al., 2024, STE(A)M on Edu, n.d.). This emphasis is often rationalized by the perceived link between technical skills and economic competitiveness. However, this technocratic bias risks marginalizing the Humanities and Social Sciences, framing them as antiquated or less economically viable. This paper challenges that narrative by reframing the marginalization of HSS not as a reflection of intrinsic irrelevance, but as a policy-induced misalignment between education and labour market structures.

The inquiry is situated within a broader debate on the nature of skills, economic value, and social development. It questions whether the STEM-centric policy orientation adequately addresses the multifaceted challenges of the 21st-century labour market, particularly in a country like Greece that

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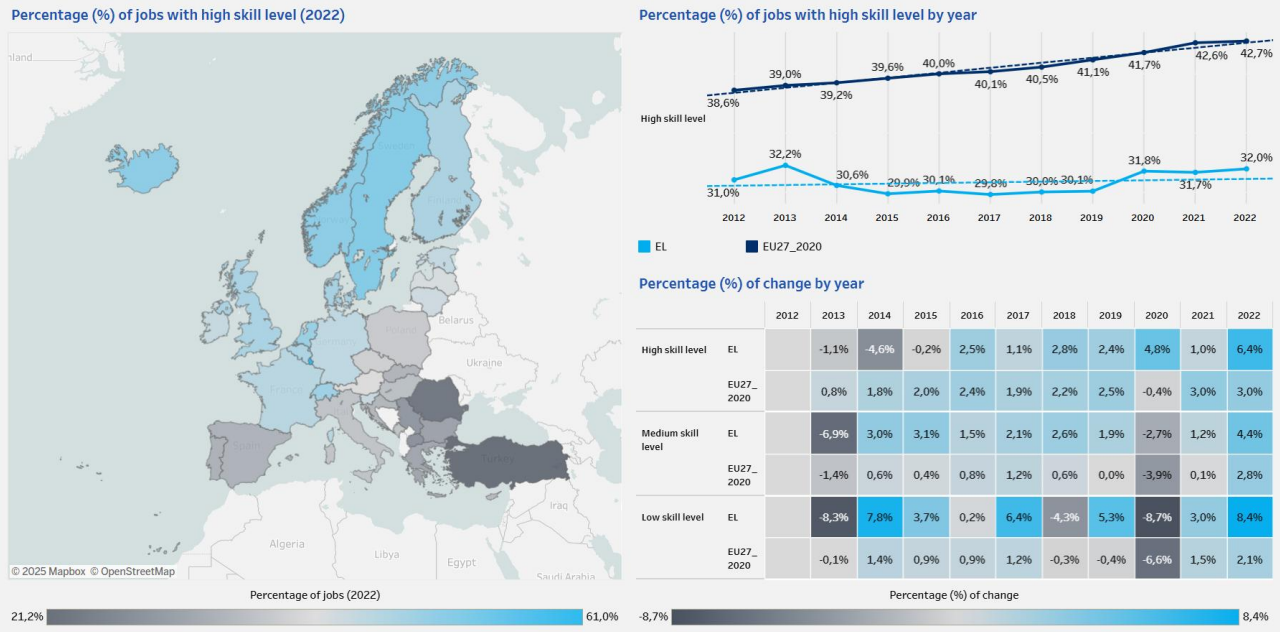
[2] Scientific Coordinator, Mechanism of Labour Market Diagnosis Mechanism, Greece.

has struggled to transition from a low-productivity, tourism-dependent economy to a knowledge-intensive model. Through this lens, the paper examines how HSS can contribute to a more resilient, inclusive, and innovative socioeconomic architecture.

The Structural Context: Low Demand for High-Skill Employment in Greece

The fundamental problem is not the oversupply of HSS graduates but the chronic under-demand for high-skill jobs across all academic backgrounds. In 2023, high-skill jobs (ISCO-08 groups 1–3: Managers, Professionals, Technicians; see ILO 2023) made up only 31.8% of total employment in Greece, significantly below the EU average of 43.6%. This discrepancy, which stood at 6.8 percentage points in 2013, has widened to 11.4 percentage points, revealing a deteriorating alignment between educational attainment and labour market demand.

Figure 1: Jobs with high skill level



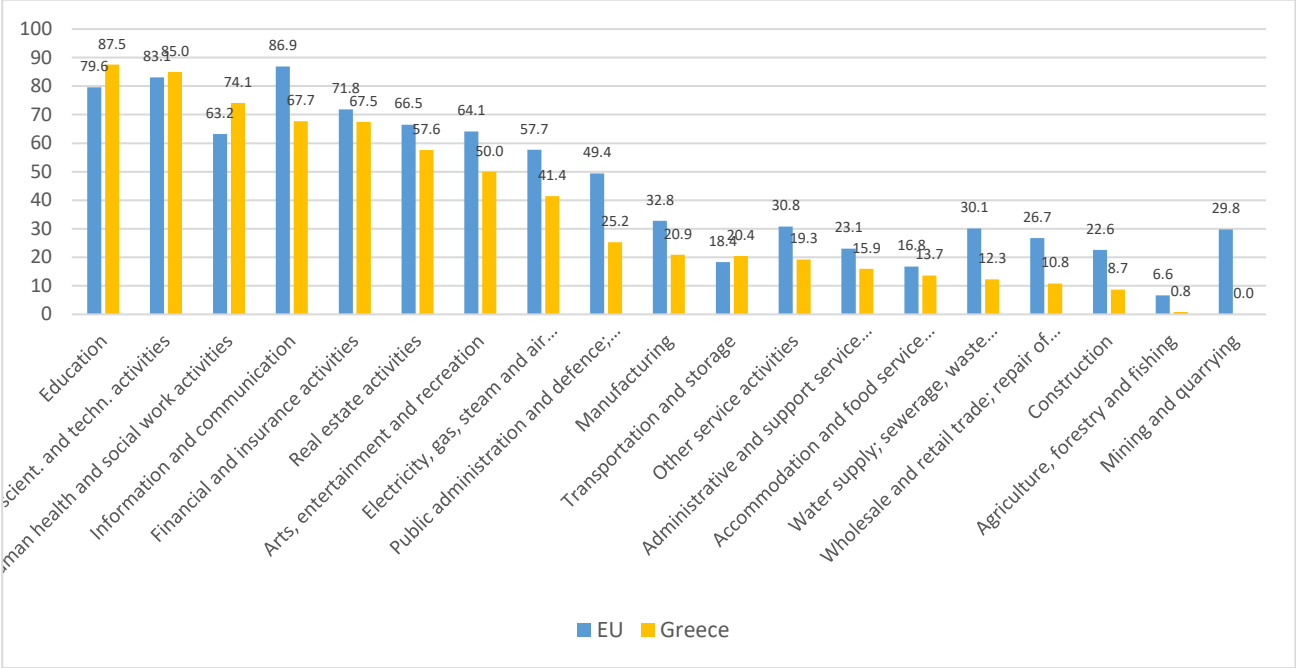
Source: ELSTAT[3], MDAAE[4]

This phenomenon is not limited to low-skill sectors. Even in relatively high-tech areas such as Information and Communications, Greece underperforms. For example, the share of high-skill jobs in this sector is 67.7% in Greece versus 86.9% in the EU. In the low-value-added sector of Accommodation and Food Services, Greece lags even further behind countries like France, which manages to incorporate a higher proportion of high-skill roles in the same domain. These figures

[3] Hellenic Statistical Authority (https://statistics.gr)
[4] Mechanism of Labour Market Diagnosis (https://mdaae.gr)

underscore a broader dysfunction: it is not merely what sectors Greece invests in, but the level of value-added and skill intensity that matters.

Figure 2: High-skill jobs as a percentage of total employment in Greece and the EU (%)



Source: ELSTAT

A popular counterargument claims that Greece simply lacks a sufficiently educated labour force to meet the demands of a high-skill economy. This is demonstrably false. In 2023, Greece exhibited a significant oversupply of university-educated individuals, with only 66.4% of tertiary graduates employed in high-skill positions. The remainder were either underemployed or working in roles that did not require their level of education. This indicates systemic issues in knowledge absorption of Greece's low-value added productive model, rather than a mismatch at the level of individual qualifications[5].

[5] These issues are further developed in S. Gavroglou and V. Kotsios, "Skills: Myths and reality" (in Greek), October 2021, https://www.researchgate.net/publication/355197210_Dexiotetes_Mythoi_kai_pragmatikoteta

Figure 3: Employment by educational and skill level

Employment by educational and skill level

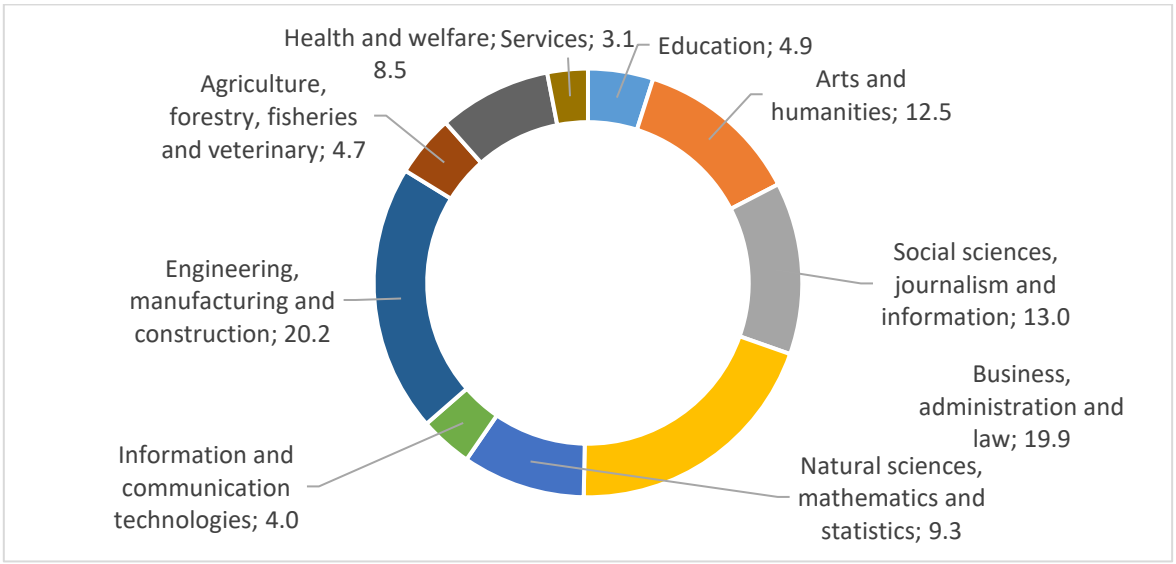
Educational level	Skill level	2015	2016	2017	2018	2019	2020	2021	2022
Total		1.220.456 100,0%	1.286.858 100,0%	1.339.616 100,0%	1.401.728 100,0%	1.435.968 100,0%	1.453.978 100,0%	1.541.740 100,0%	1.625.107 100,0%
Master's and tertiary education degree	High	849.726 69,6%	875.446 68,0%	891.977 66,6%	926.448 66,1%	945.732 65,9%	989.627 68,1%	1.011.215 65,6%	1.069.114 65,8%
	Medium	328.361 26,9%	360.839 28,0%	389.851 29,1%	423.786 30,2%	444.442 31,0%	422.764 29,1%	478.750 31,1%	499.506 30,7%
	Low	14.538 1,2%	18.588 1,4%	21.551 1,6%	16.799 1,2%	15.821 1,1%	11.324 0,8%	18.117 1,2%	19.866 1,2%
	Not labeled	27.831 2,3%	31.985 2,5%	36.238 2,7%	34.694 2,5%	29.972 2,1%	30.263 2,1%	33.658 2,2%	36.621 2,3%

Source: Ergani, MDAAE

The Myth of Waning Student Interest in HSS

One commonly cited justification for the diminished emphasis on HSS is a supposed diminished student interest. Yet data suggest otherwise. In Greece, the combined enrollment in Humanities and Arts and Social Sciences, Journalism and Information represents a sizeable 25.5% of the tertiary student population.

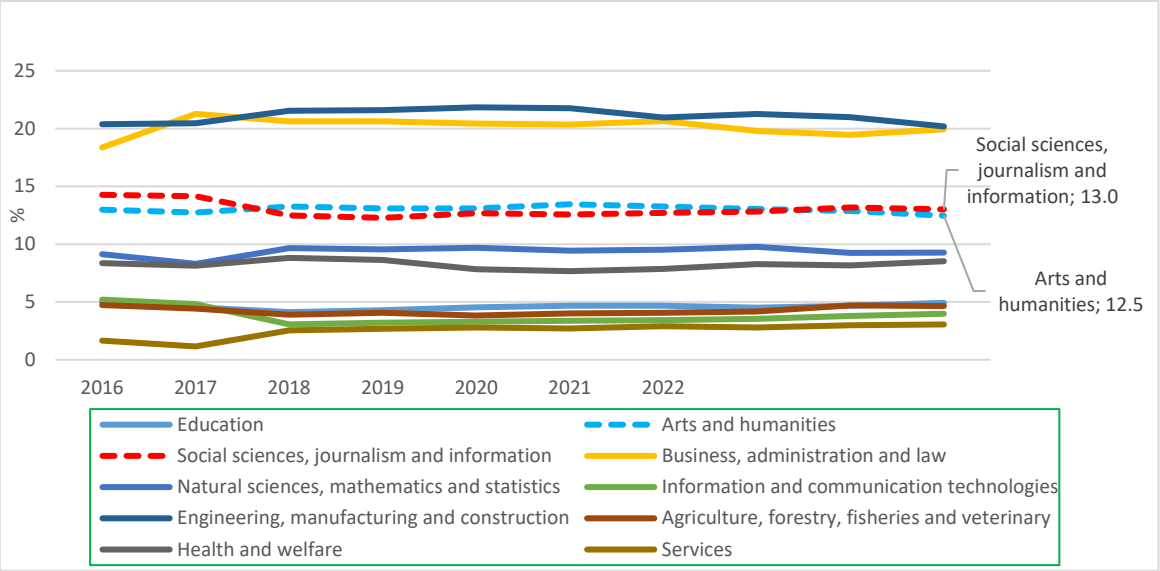
Figure 4: Enrollment in higher education in Greece



Source: ELSTAT

Moreover, these figures have held steady since 2016, despite significant policy and cultural pressure in favor of STEM disciplines.

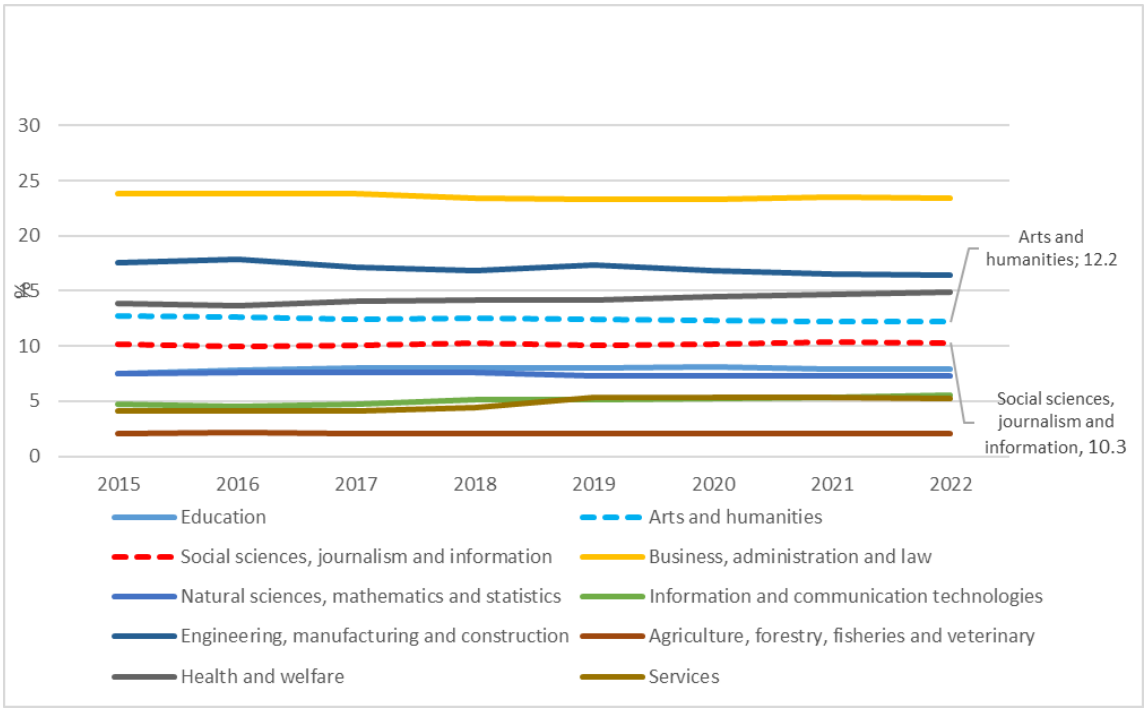
Figure 5: Evolution of tertiary education enrollment in Greece, by ISCED 2011 field of eduction (%)



Source: ELSTAT

Across the EU27, a similar pattern emerges, with negligible shifts in enrollment shares.

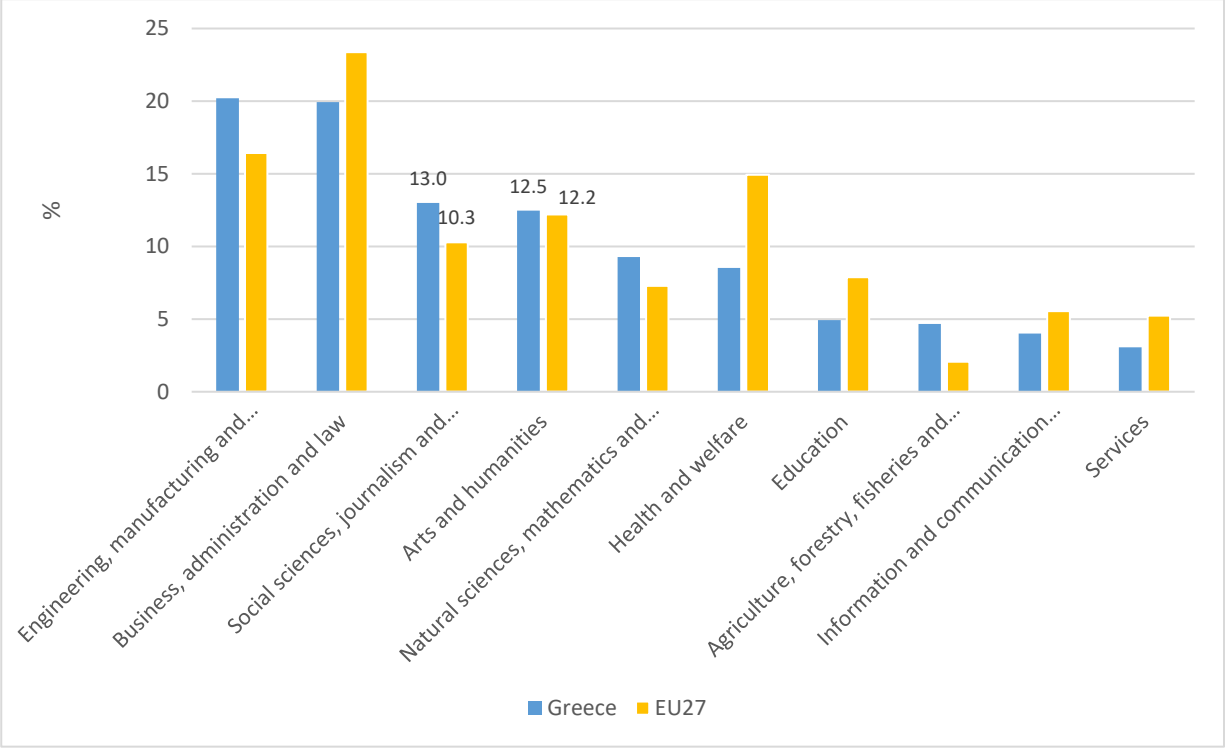
Figure 6: Evolution of tertiary education enrollment in the EU, by ISCED 2011 in field of education (%)



Source: ELSTAT

According to the latest Eurostat release (2022), while Engineering, Manufacturing, and Construction, as well as Business, Administration, and Law remain dominant in both Greece and the EU, the consistent representation of HSS contradicts narratives of student disengagement.

Figure 7: Distribution of tertiary education students in Greece and the EU, by field of education (%)



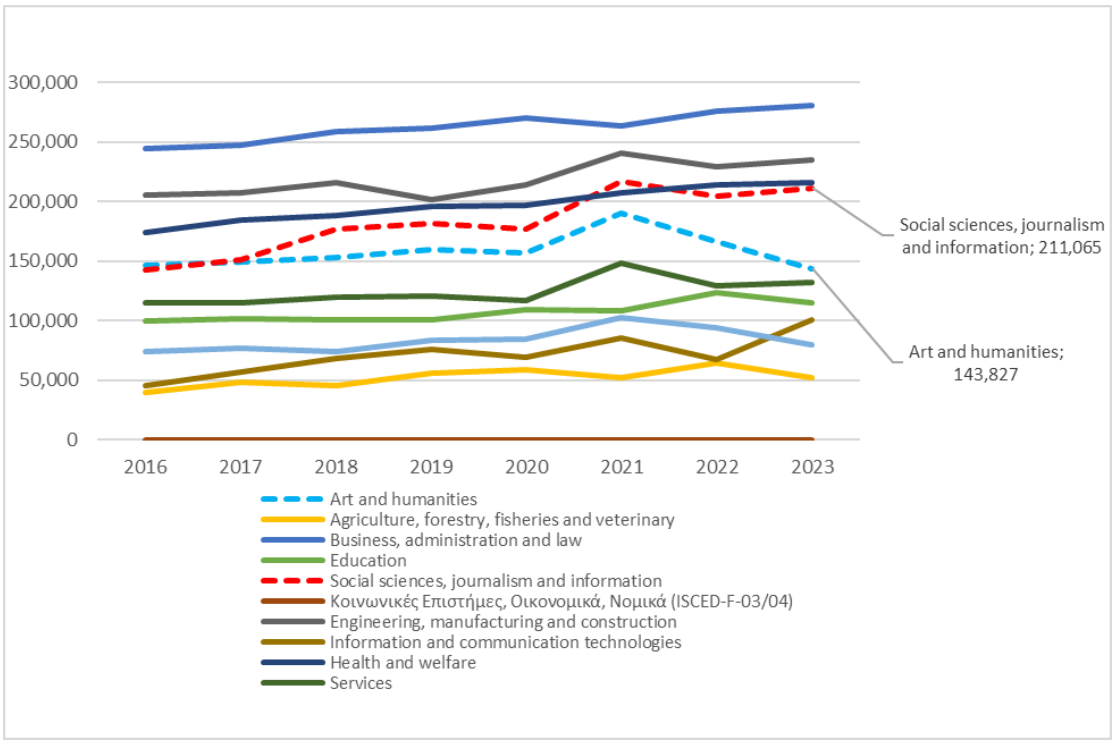
Source: ELSTAT

Indeed, the endurance of these fields in student preferences reflects an ongoing recognition of their cultural, intellectual, and even economic value—values not always visible in short-term labour market metrics. Moreover, it is important to consider how students choose their fields of study. Many are motivated by intrinsic interest, values alignment, and social purpose rather than narrow calculations of employability. This underscores the need for labour markets to adapt to the diverse outputs of higher education, rather than the inverse. The choice of study is a personal investment in identity and purpose, not merely a market-driven transaction.

Employment Trends and Underutilization by Field of Study

When examining employment outcomes, the data reveal a nuanced picture. Social Sciences, Journalism and Information have witnessed a 48.2% increase in employment between 2016 and 2023. This trend challenges the assumption that HSS degrees are a one-way ticket to unemployment or underemployment. Humanities and Arts show a modest decline of 1.9% in the same period—a fluctuation within a much larger positive trend observed in previous years.

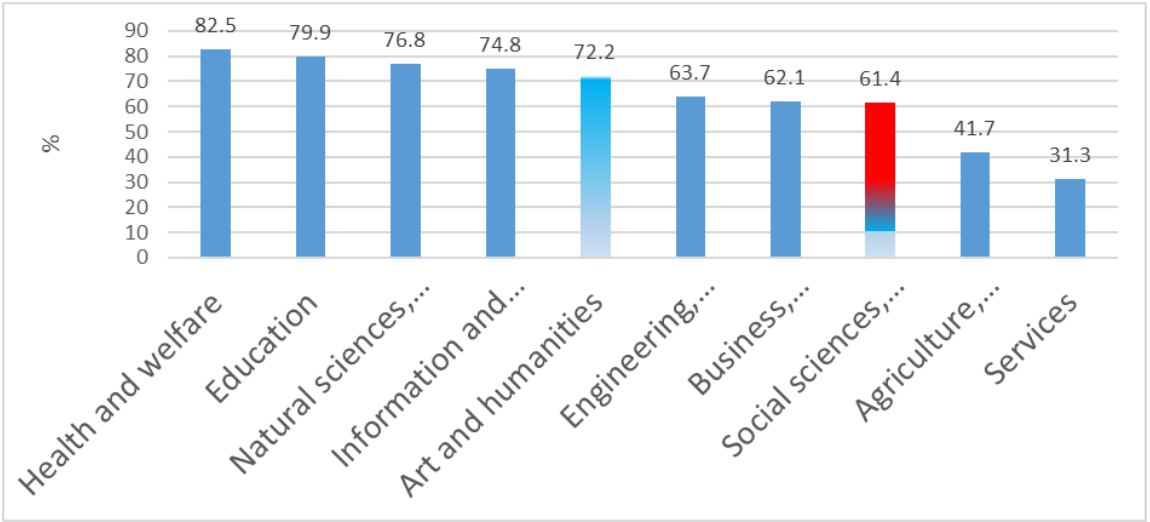
Figure 8: Employment trends



Source: ELSTAT

The real concern lies in the rate of high-skill employment. In 2023, 72.2% of Humanities and Arts graduates were employed in high-skill roles. While this is lower than in Health (82.5%) and Education (79.9%), it is significantly higher than in Engineering (63.7%) and especially in Agriculture (41.7%) and Services (31.3%). Social Sciences graduates, at 61.4%, fare comparably to those in Business and Law. These statistics invalidate any simplistic dichotomy between HSS and STEM in labour market value.

Figure 9: Employment of tertiary education and above graduates in high-skill jobs (%)



Source: ELSTAT

Moreover, these figures only capture quantitative employment outcomes. They do not measure job satisfaction, alignment with field of study, civic engagement, or contribution to social innovation—dimensions in which HSS graduates often excel and which are essential for healthy democracies.

Interdisciplinarity and Collective Intelligence: Core Contributions of HSS

Despite the onslaught of technology in the economy and everyday life, it is not unreasonable to think that both social development and individual success in the labour market require a golden combination — the synergy, cooperation, and mutual reinforcement of multiple types of knowledge, abilities, and skills that come from different academic disciplines. This has always been the case, but even more so today and increasingly in the future (e.g. Science World Report, 2023, Hovis, 2018, The British Academy, 2021). Technological advancement and economic complexity increasingly require interdisciplinary problem-solving capacities. In this context, HSS offer indispensable skills that complement technical expertise. Thomas Malone's work on "superminds" emphasizes that high-functioning teams and organizations depend not just on individual IQs but on communication, diversity of thought, and the ability to navigate complexity—all hallmarks of HSS training.

Critical thinking, for instance, is not merely a buzzword. It encompasses the ability to interrogate assumptions, engage with complexity, and reason ethically. Similarly, communication - written, oral, visual - is essential to the articulation of ideas, collabourative work, and leadership. Rhetorical skills, developed through training in literature, history, and philosophy, are vital for persuasion, negotiation, and policymaking.

Empathy and ethical reasoning allow individuals to consider the broader implications of decisions, a necessity in fields like AI ethics, public health, and environmental sustainability. In fact, many of the most pressing questions of our age - Who controls our data? What are the boundaries of automation? How do we ensure inclusion? - are not technical but moral and political.

Moreover, the humanities foster creativity. Whether through artistic expression, philosophical exploration, or sociological critique, HSS disciplines train students to imagine alternative futures, challenge dominant paradigms, and experiment with new ways of seeing and being. Innovation, in this sense, is not merely technological but cultural.

Labour Market Signaling and Employer Preferences

Surveys by the National Association of Colleges and Employers (NACE) and the World Economic Forum provide empirical support for these claims. Employers consistently rank soft skills among the most valued competencies. In the 2025 NACE Job Outlook survey, critical thinking (91.2%),

teamwork (86.3%), and communication (85.9%) topped the list. These are not easily replaceable by automation, nor are they necessarily cultivated in STEM programs.

Additionally, the hiring practices of businesses are evolving. According to the WEF Future of Jobs Report (2023), practical experience (71%) and in-house skill assessments (47%) now outweigh formal degrees (45%) in hiring decisions. This shift de-emphasizes credentialism in favor of demonstrated ability, creating new pathways for HSS graduates to compete and thrive.

The Digital Turn in the HSS

The idea that HSS resist innovation is increasingly untenable. Across Europe and in Greece, there is a growing movement to integrate digital tools into humanistic inquiry. The digital humanities and computational social sciences exemplify this transformation, merging traditional analysis with big data, AI, and machine learning (University of Crete, 2024).

Departments of history, philosophy, linguistics, and anthropology now routinely offer training in digital archiving, text mining, GIS mapping, and network analysis. These hybrid competencies enable students to bridge the gap between critical reflection and data-driven problem-solving.

In Greece, this trend is visible in curriculum redesign, interdepartmental collabouration, and the establishment of digital resource centers. HSS programs are expanding to include courses on digital literacy, programming, and AI ethics. Such reforms prepare students not only to navigate but to shape the future of work.

Strategic Voices from Tech and Business

We observe a fixation among policymakers in favor of STEM over SHAPE (Social Sciences, Humanities, and the Arts for People and the Economy). And yet, this fixation is not justified even by the champions of technology and entrepreneurship themselves. In fact, 60% of American CEOs come from a humanities background. Nearly one-third of Fortune 500 company leaders hold a degree in the humanities (Science World Report, 2023).

Steve Jobs, the visionary behind Apple, famously said: "Our best computer scientists were also historians and artists... It’s the marriage of technology with the liberal arts that yields results that make our hearts sing" (Dickens, 2018).

Mark Zuckerberg, founder of Meta, remarked: "Facebook’s success is as much a result of psychology and sociology as it is of technology" (Larson, 2011).

Bill Gates, in envisioning the future of healthcare, has predicted that AI will soon perform many of the functions of medical doctors. This forecast underscores the need for ethical judgment, empathy, and social context; all cultivated through HSS (Zielber, 2025).

Steven Johnson of Google Labs has gone further, suggesting that humanities skills are increasingly central to AI development. Philosophical and psychological acumen are vital to fine-tuning models and ensuring alignment with human values. He refers to this trend as the "revenge of the humanities" - a term that provocatively captures the resurgence of interest in disciplines once considered obsolete (Altchek, 2025).

Conclusion

In Greece, the struggles of the Humanities and Social Sciences (HSS) don't reflect a lack of importance — they reflect a lack of direction. The problem isn't with the disciplines themselves, but with how we fail to see the ways work, knowledge, and society are shifting in today's world. Far from being outdated, HSS fields offer exactly the kind of understanding we need to make sense of the ethical, social, and cultural complexities of our time.

It's a mistake to treat these subjects as economically irrelevant or merely academic. They play a real, strategic role in shaping how people think, communicate, and collabourate. They help us build institutions that can respond wisely and humanely to rapid change. For Greece, supporting HSS isn't just about preserving intellectual tradition, it's about preparing for a future that's not only innovative but socially and culturally grounded.

To move forward, we need to let go of the rigid split between STEM and HSS. The real progress lies in blending perspectives, in designing an educational landscape that's open, adaptable, and rooted in cooperation. When we do that, we make space for the full range of talent and ideas our society holds, and that's how real, inclusive growth begins.

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