

# COMPARATIVE ANALYSIS OF FUNDING OF UNIVERSITY EDUCATION IN EU COUNTRIES

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**Abstract.** This paper conducts a comparative analysis of the funding models for university education in the European Union (EU), focusing on government, private, and alternative funding sources. Purpose of the study is to analyze and compare the different funding models for university education in the EU and evaluate their efficacy. The basis of the study was the scientific works of researchers from different countries of the world and the OECD report, which presents the features of public, private and alternative financing of higher education. The main methods used in the article are methods of analysis and synthesis, comparative analysis and generalization. The analysis examines how these funding models impact accessibility, quality, and sustainability of higher education across different EU member states, including Germany, Sweden, the United Kingdom (pre-Brexit), and Italy. Through a review of existing literature and an evaluation of different funding mechanisms, the study identifies key trends and outcomes associated with each funding type. The paper also explores how European integration and policies influence these funding mechanisms. By comparing models across various countries, this analysis aims to highlight best practices and recommend policy enhancements to harmonize educational opportunities and meet future economic and social demands. The study recommends that EU countries consider a balanced approach to funding that combines the strengths of government support, private investment, and innovative funding mechanisms. This approach should aim to ensure equitable access to high-quality education while fostering financial sustainability and adaptability to changing economic conditions. Further, the paper suggests that ongoing evaluation and adaptation of funding models are essential to address the evolving needs of students and the broader socio-economic landscape. These findings and recommendations contribute to a deeper understanding of the complexities and dynamics of funding university education in the EU, providing a foundation for policymakers to enhance the effectiveness and fairness of higher education systems across Europe.

**Keywords:** university education funding; European Union; government funding; private funding; alternative funding; mechanisms; accessibility; higher education policy; public-private partnerships; student loans.

**JEL Classification** G41; I25; I28

**Formulas:** 0; **fig.:** 3; **table:** 3; **bibl.:** 16

**Introduction.** University education is a cornerstone of economic, social, and cultural development in societies across the globe. In the European Union (EU), the funding of higher education is crucial not only for maintaining high standards of learning and research but also for ensuring that education is accessible to all citizens regardless of economic background. The diversity in economic conditions, cultural values, and political systems among EU countries results in varied approaches to funding university education. This comparative analysis aims to explore these differences to understand how they influence educational outcomes and opportunities.

Higher education funding within the EU generally comes from three main sources: government funding, private funding, and alternative funding mechanisms like student loans and public-private partnerships. The proportions and conditions of these funding sources significantly affect the accessibility, quality, and structure of university education. Government funding can include direct financing of institutions, grants to students, and research funding. Private funding typically comes from tuition fees, private donations, and corporate sponsorship. Alternative sources like student loans are increasingly important in some regions, reflecting broader trends towards the marketization of higher education.

European integration has led to increased mobility for students and staff, creating a more interconnected higher education system. Consequently, the methods and levels of funding not only shape domestic education landscapes but also impact the EU's collective educational and economic performance. Countries like Germany and Sweden offer almost free tuition to encourage higher enrollment rates and reduce the financial barriers to education, while others like the UK have high tuition fees backed by extensive loan systems.

The efficiency and equity of these systems are matters of ongoing debate. For instance, higher tuition fees are often associated with higher private returns, but they may also deter lower-income students if sufficient scholarships or financial aid are not available. Similarly, heavily subsidized tuition can promote accessibility but might strain national budgets and impact the quality of education if not adequately supported by other funding streams.

This paper delves into how these varying funding models impact the core objectives of higher education systems, including promoting personal development, fostering research and innovation, and contributing to social cohesion and economic prosperity. By comparing these models across different EU countries, the analysis aims to highlight best practices and identify potential areas for policy enhancement to better harmonize educational opportunities across Europe.

**Literature Review.** The funding mechanisms for university education in the European Union (EU) display considerable variation, reflecting the diverse economic, cultural, and political landscapes across member states. This literature review explores the primary sources and models of funding in higher education across the EU, examining their impact on accessibility, quality, and sustainability. The review draws on a range of scholarly articles, policy reports, and comparative studies.

EU countries utilize a mix of public, private, and alternative funding sources to support their higher education systems. Government funding, often the largest source,

varies significantly in terms of the percentage of GDP allocated to higher education. According to Eurydice (2020), Nordic countries like Denmark and Sweden invest heavily in their educational systems, ensuring low to no tuition fees for students. In contrast, nations such as the UK (pre-Brexit) have shifted towards high tuition fees supplemented by private loans (Marginson, 2018).

The work of Clancy and Dill (2016) provides insight into how historical and socioeconomic factors influence national funding policies. Their comparative analysis shows that countries with strong welfare states tend to maintain high levels of public funding, prioritizing accessibility and equity in education. Conversely, countries leaning towards neoliberal policies have increased tuition fees, relying more on private funding and loans, as detailed by Johnstone and Marcucci (2010).

Research consistently highlights the relationship between funding models and higher education accessibility. Studies by Vossensteyn et al. (2015) indicate that higher public investment typically correlates with better accessibility and higher enrollment rates. However, these systems are not without challenges, as they often struggle with financial sustainability under economic strain (Kaiser et al., 2015). On the other hand, systems with higher tuition fees, such as in the UK, often develop extensive financial aid services to mitigate barriers to access (Cantwell and Pusser, 2017).

Emerging funding models include income-share agreements and public-private partnerships, which offer potential solutions to the limitations of traditional funding mechanisms. Palacios (2014) explores the viability of income-share agreements as a way to align the costs of education with post-graduation income levels, potentially reducing the financial risk to students. Meanwhile, Salmi and Hauptman (2006) discuss how public-private partnerships can inject capital and innovation into universities, though these arrangements also require careful regulation to ensure educational goals are not compromised by commercial interests.

The OECD (2021) report suggests that balancing public and private funding sources while ensuring equitable access to quality education is critical for sustaining the higher education sector. The report recommends policies that promote fairness in financial contributions and enhance the efficiency of spending in higher education.

The funding of university education in the EU involves complex and varied models that reflect broader societal values and economic strategies. As the global economic landscape evolves, EU countries may need to adapt their funding models to sustain and enhance the quality and accessibility of higher education.

**Aims.** Purpose of the study is to analyze and compare the different funding models for university education in the EU and evaluate their efficacy.

*The main objectives of the article are:*

- to identify and compare funding models;
- to evaluate impact on accessibility and quality;
- to examine policy influences;
- to propose recommendations for policy makers.

**Methodology.** The basis of the study was the scientific works of researchers from different countries of the world and the OECD report, which presents the features of public, private and alternative financing of higher education. The main methods used

in the article are methods of analysis and synthesis, comparative analysis and generalization.

**Results.** We will present the main results of the conducted research on the forms of financing higher education in the EU countries in three areas:

- government funding;
- private funding;
- alternative funding.

***Comparative Analysis of Government Funding of University Education in the European Union.*** Government funding of university education in the European Union varies significantly across member states, reflecting differing historical contexts, economic capabilities, and educational philosophies. This analysis explores the differences in government funding models across several EU countries, including Germany, Sweden, the United Kingdom (pre-Brexit), and Italy, to understand how these variations impact the accessibility and quality of higher education.

***Germany.*** Germany exemplifies a high level of government investment in higher education, characterized by the absence of tuition fees for both domestic and international students at public universities. This policy is underpinned by the belief that education is a public good and should be accessible to all, irrespective of financial background. As a result, universities are primarily funded through federal and state budgets. This approach aims to promote higher education accessibility and has resulted in high enrollment rates. However, some challenges include overcrowding in universities and varying funding levels across different states, potentially affecting the quality and availability of resources.

***Sweden.*** Like Germany, Sweden offers free tuition to students from the EU/EEA and Switzerland. The Swedish government also provides a comprehensive financial support system for students, including grants and loans which cover living expenses, promoting equitable access to higher education. This generous funding model is sustained by high tax rates, reflecting a strong societal commitment to education. The Swedish model is generally effective in maintaining high educational standards and accessibility, but it also faces financial sustainability challenges, especially with an increasing number of students and potential economic downturns.

***United Kingdom.*** Before its exit from the EU, the United Kingdom adopted a model where higher education was largely funded by tuition fees, which are among the highest in Europe. The government regulates these fees and provides students with access to loans that cover tuition and living costs, repayable after graduation once a certain income threshold is reached. This model shifts the upfront cost of education from the state to the individual, ostensibly encouraging universities to compete and improve the quality of education. However, this model has been criticized for leading to high student debt and potentially discouraging lower-income students from pursuing higher education.

***Italy.*** Italy offers a contrasting example where university tuition fees are relatively low compared to the UK but vary depending on the family income, aiming to balance accessibility and quality. The government funding for universities is supplemented by these tuition fees, but overall investment in higher education is lower than in Germany

or Sweden. This has occasionally led to budget constraints, affecting the resources available to universities and the quality of facilities and research.

The impact of government funding models on the availability and quality of higher education in EU countries is presented in Table 1.

**Table 1. Results of a comparative analysis of government funding models in EU countries**

Comparative Outcomes	Description
Accessibility	Countries like Germany and Sweden, with low to no tuition fees, generally provide more accessible higher education opportunities to a broader section of the population. In contrast, the UK, with its high tuition fees, although mitigated by loans, might deter some potential students due to the prospect of long-term debt
Quality	The quality of education is ostensibly higher in countries that can invest heavily in their universities, like Sweden and Germany, though it also depends significantly on how these funds are allocated within universities. The UK's model promotes competitive enhancement of quality, though this is debated in terms of actual impact versus increasing commercialization of education
Financial Sustainability	Models relying heavily on government funding (e.g., Germany and Sweden) face challenges related to economic fluctuations more directly than those passing more cost to students (e.g., UK), which however risk long-term socio-economic divides

*Source: developed by authors*

This comparative analysis reveals that while all the models aim to balance accessibility, quality, and sustainability, the outcomes can vary significantly. Each model reflects underlying national values and economic conditions and presents unique sets of challenges and benefits. The analysis suggests a trend where countries with higher public investment in higher education tend to achieve greater accessibility, though questions about sustainability and optimal allocation of resources remain critical.

Government funding of university education in the European Union (EU) presents a complex landscape with both shared characteristics and country-specific features. The analysis on Figure 1 explores the commonalities and distinctions across various EU member states, examining how these influence educational accessibility, quality, and sustainability.

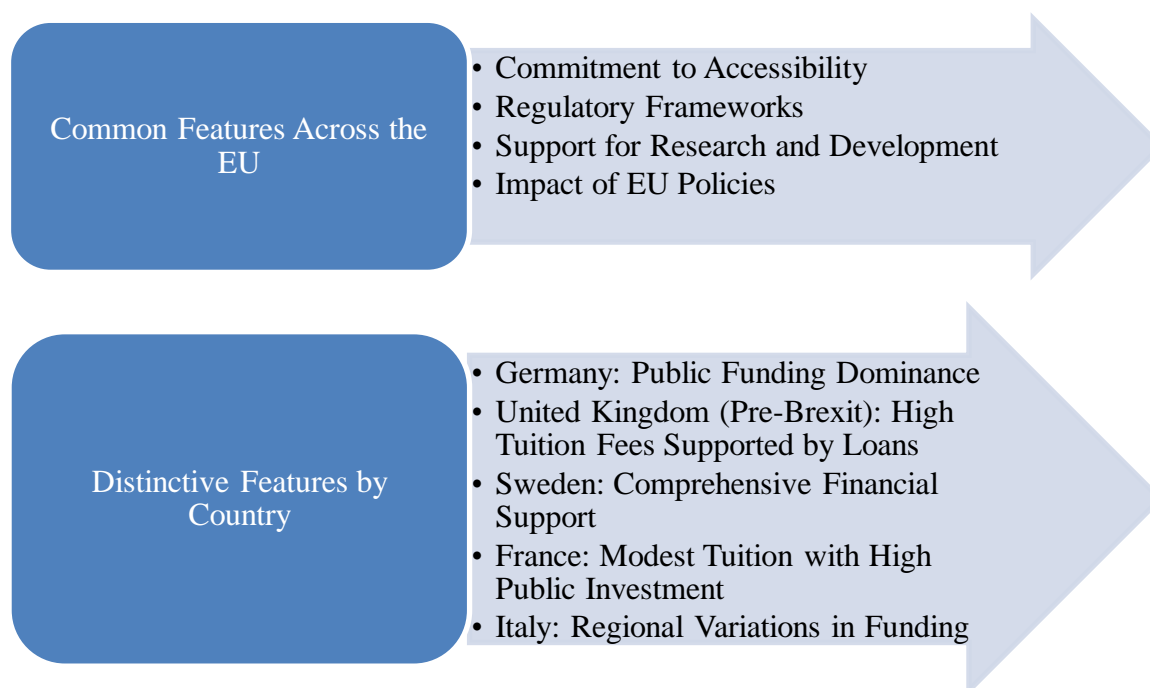
The *common features* of government funding of university education Across the EU:

1. *Commitment to Accessibility:* Most EU countries share a fundamental commitment to making higher education accessible to all citizens. This commitment is typically reflected in significant public investment in higher education, whether through direct funding to institutions, subsidies for students, or support for specific programs like those targeting disadvantaged groups.

2. *Regulatory Frameworks:* EU countries commonly operate under regulatory frameworks that set broad guidelines for funding allocations, fee structures, and quality assurance. These frameworks are designed to maintain a minimum standard of education and ensure that public funds are used efficiently and effectively.

3. *Support for Research and Development:* Another common feature is the strong support for research and development within higher education institutions. Government funding often includes specific allocations for research, encouraging universities to contribute to national and international scientific and technological advancements.

4. *Impact of EU Policies:* All member states are influenced by broader EU policies and initiatives, such as the Bologna Process, which aims to ensure comparability in the standards and quality of higher-education qualifications across Europe. Such policies encourage cooperation and standardization among countries.



**Figure 1. The common features and differences of government funding of university education in the European Union in terms of impact on accessibility, quality, and sustainability of education**

*Source: developed by authors*

The *distinctive features* of government funding of university education Across the EU:

1) **Germany: Tuition-Free Education:** Germany stands out for offering tuition-free education at public universities for both domestic and international students, primarily funded through federal and state governments. This approach is highly effective in promoting accessibility but poses challenges in terms of financial sustainability and institutional overcrowding.

2) **United Kingdom (Pre-Brexit): High Dependency on Tuition Fees:** The UK, before Brexit, significantly differed from other EU countries with its high tuition fees backed by a comprehensive student loan system. This model promotes a high degree of autonomy for universities and encourages a market-oriented approach but raises concerns about student debt and potential inequity.

3) **Sweden: Inclusive Financial Aid System:** Sweden not only provides free tuition for EU/EEA students but also offers a robust system of grants and loans that

cover living costs, making higher education highly accessible and reducing financial barriers for students.

4) **France: Graduated Tuition Fees Based on Income:** France employs a unique model where tuition fees are relatively low and scaled according to the student's family income. This approach, combined with significant public investment in higher education, helps maintain broad access while fostering high-quality education.

5) **Italy: Diverse Funding Approaches:** Italy showcases significant regional variations in how public universities are funded. While the national government provides a portion of the funding, individual regions supplement this with additional resources, leading to disparities in the quality and accessibility of higher education across the country.

The landscape of government funding in EU university education is characterized by a mix of overarching commonalities aimed at ensuring accessibility and quality and distinct national features that reflect local economic conditions, cultural values, and educational priorities. While the shared commitment to higher education as a public good unites EU countries, the diverse approaches to funding underscore the challenges of balancing equity, quality, and financial sustainability in a rapidly changing global educational environment. This comparative perspective highlights the need for ongoing evaluation and adaptation of funding models to meet future educational demands and socio-economic challenges.

**Comparative analysis of private funding of university education in the European Union.** Private funding of university education across European Union (EU) countries exhibits a wide range of models, each reflecting unique national policies, economic contexts, and cultural values. This analysis explores how different EU countries - specifically the Netherlands, the United Kingdom, France, and Spain - approach private funding in higher education, examining the implications for university quality, access, and innovation.

*Netherlands.* In the Netherlands, private funding primarily comes from tuition fees, which are set at a moderate level by international standards. Dutch universities also actively engage in raising funds through collaborations with businesses, private research grants, and alumni contributions. This mixed model of public and private funding helps Dutch institutions maintain high standards of education and research while keeping the university financially accessible for EU students. The government also facilitates an extensive student loan system to manage the cost of living and tuition, ensuring that higher education remains attractive and accessible.

*United Kingdom.* The United Kingdom (pre-Brexit) represents a model with significant reliance on private funding, primarily through high tuition fees, which are among the highest in Europe. The tuition fees form a substantial part of university budgets, supplemented by private donations, endowments, and income from partnerships with the private sector. This model encourages universities to operate competitively, similar to businesses, aiming to attract students and funding based on reputation and program offerings. While this can drive quality and innovation, it also raises concerns about the long-term debt burden on students and potential barriers to access for lower-income groups.

*France.* France features a model where tuition fees are relatively low, even at some of its most prestigious universities. Private funding comes additionally from partnerships with the private sector, particularly in research and development. The French government often acts as a mediator in these partnerships, promoting innovation while ensuring educational equity. This approach aims to leverage private funding without transferring the cost to students, thus maintaining broad access to higher education. However, the reliance on public funds can limit the potential for additional resources that private investments could offer.

*Spain.* In Spain, the traditional model has been heavily reliant on public funding. However, recent economic pressures have led to an increase in tuition fees and a greater openness to private sector partnerships. Spanish universities are increasingly seeking private funding through research contracts, service agreements, and more substantial alumni donation programs. This shift aims to supplement diminishing public funds and maintain quality, but it has also raised concerns about increasing the financial burden on students.

The impact of private funding models on the availability and quality of higher education in EU countries is presented in Table 2.

**Table 2. Results of a comparative analysis of private funding models in EU countries**

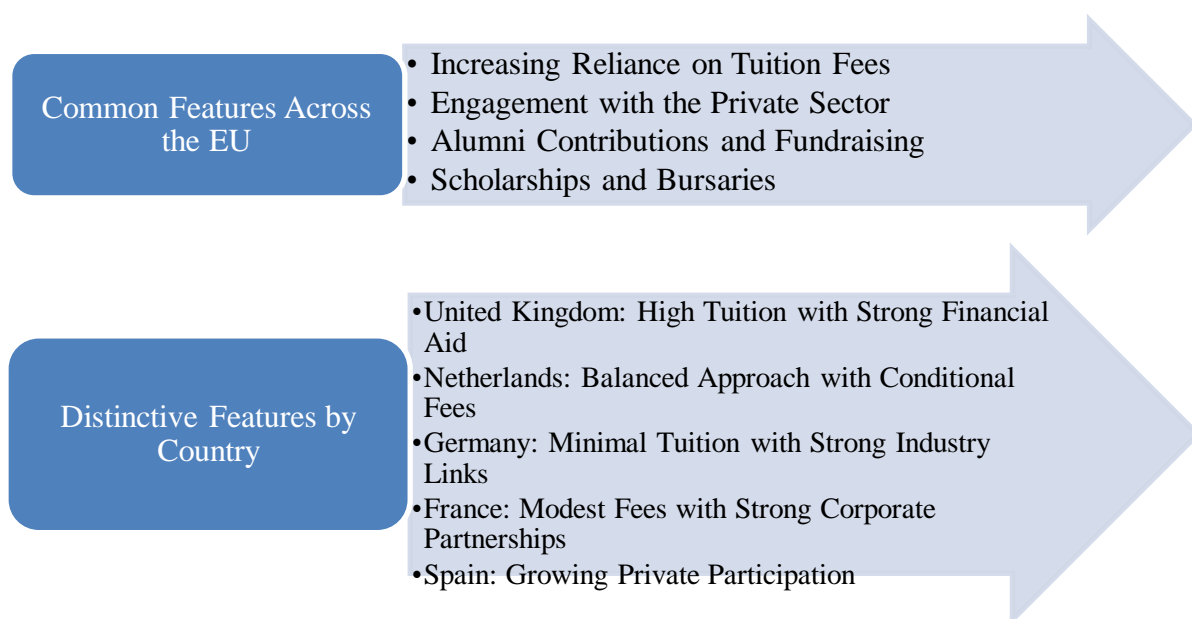
Comparative Outcomes	Description
Accessibility	Countries like France and the Netherlands maintain greater accessibility due to lower tuition fees and robust financial support systems. In contrast, the UK's high-fee model potentially restricts access, though extensive loan and scholarship programs are designed to mitigate these barriers
Quality and Innovation	High levels of private funding, as seen in the UK, are often associated with higher levels of institutional autonomy, which can drive innovation and quality improvement. However, this is contingent on effective management and reinvestment of these funds into core educational priorities
Financial Sustainability	The increasing shift towards private funding in countries like Spain indicates a trend towards diversified funding streams, which may offer enhanced sustainability but also bring challenges related to equity and access

*Source: developed by authors*

The role of private funding in university education within the EU varies significantly by country, reflecting diverse economic strategies and educational philosophies. While private funding can enhance institutional autonomy and innovation, it must be balanced carefully with public investments to ensure that higher education remains accessible and equitable. This analysis underscores the importance of strategic policy planning to optimize the benefits of private funding while mitigating its challenges, particularly in terms of educational equity and long-term financial burdens on students.

Private funding of university education in the European Union (EU) exhibits both shared characteristics and distinct national variations. We have carried out an analysis that delves into the patterns and features of private funding in different EU Member States, exploring how these aspects affect the dynamics of higher education, such as innovation, affordability and institutional autonomy (Figure 2).





**Figure 2. The common features and differences of private funding of university education in the European Union in terms of impact on accessibility, quality, and sustainability of education**

*Source: developed by authors*

The *common features* of private funding of university education Across the EU:

1. *Increasing Reliance on Tuition Fees:* Across the EU, there is a noticeable trend toward increasing reliance on tuition fees as a significant source of private funding. This shift is partly driven by the need to supplement public funding and support the growing demands on higher education systems, including expanding student populations and the rising costs of technology and infrastructure.
2. *Engagement with the Private Sector:* Another commonality is the engagement with the private sector through partnerships, research collaborations, and sponsorships. These relationships are often encouraged to enhance funding sources and integrate practical, real-world experiences into academic programs, thereby increasing their relevance and appeal.
3. *Alumni Contributions and Fundraising:* Many universities across the EU are developing more structured approaches to alumni relations, seeking donations and other forms of support. Fundraising campaigns and endowment funds, though more established in some countries than others, are becoming a universal feature as institutions seek to diversify their revenue streams.
4. *Scholarships and Bursaries:* Private scholarships and bursaries are increasingly used across the EU to attract top talent and support students from less advantaged backgrounds. These funding sources are crucial for maintaining diversity within universities and helping bridge the gap between public funding and total educational costs.

The *distinctive features* of government funding of university education Across the EU:

- 1) United Kingdom: High Tuition Fees Model. The UK (pre-Brexit) stands out with one of the highest levels of tuition fees in Europe. These fees are a primary source

of revenue for universities and are supplemented by a well-developed system of student loans and grants, which helps mitigate the impact of high fees on access to higher education.

2) Netherlands: Income-Dependent Tuition Fees. The Netherlands employs a unique model where tuition fees are moderated by income, making higher education accessible while still benefiting from private contributions. Dutch universities also actively engage in commercial activities and public-private partnerships to boost their private funding.

3) Germany: Low Tuition Fees. Unlike many of its EU counterparts, Germany maintains very low tuition fees, even for non-EU students in several states. German universities compensate for this with strong ties to the industry, securing private funding through collaborative research projects and technology transfer initiatives.

4) France: Corporate Sponsorship. French universities often feature significant partnerships with major corporations, particularly in engineering and business schools. These partnerships not only provide funding but also create pathways for student internships and employment, enhancing the practical value of education.

5) Spain: Emerging Private University Sector. Spain has seen growth in its private university sector in response to overcrowding and underfunding of public universities. These private institutions are more reliant on tuition fees and corporate partnerships, offering specialized programs that cater to market demands.

While private funding mechanisms across the EU share certain common strategies, such as increasing tuition fees and enhancing private sector engagement, there are distinctive national approaches that reflect local educational policies, economic conditions, and cultural values. These differences highlight the challenges and opportunities in balancing private funding with the goals of accessibility, quality, and sustainability in higher education. The diversity in private funding models also underscores the need for innovative approaches to ensure that universities continue to serve as engines of social mobility and economic development, even in the face of financial constraints.

**Comparative analysis of alternative funding of university education in the European Union.** Alternative funding sources for university education in the European Union (EU) are increasingly critical as countries navigate economic constraints and strive for educational innovation. This analysis examines how various EU countries implement alternative funding mechanisms, focusing on student loans, public-private partnerships (PPPs), crowdfunding, and alumni funding. The insights reveal the nuanced ways in which these sources supplement traditional government and private funding.

*United Kingdom.* The UK has a robust student loan system, characterized by tuition fee loans and maintenance loans that cover living costs. These loans are repayable on an income-contingent basis, which means graduates only start repaying once they earn above a certain threshold. This system, although it increases student debt, facilitates access to higher education for many. Public-private partnerships in the UK are well-established, especially in research-intensive universities. These partnerships often involve significant corporate funding for university research centers

and have been crucial in driving technological advancements and commercializing research.

*Germany.* Germany excels in leveraging alternative funding through research grants from both EU sources and private corporations, particularly in engineering and technology disciplines. These funds enhance the resources available for cutting-edge research and development projects. Germany offers tax incentives to companies that invest in higher education, including funding collaborative projects at universities. This approach not only provides alternative funding but also strengthens ties between academia and industry.

*Netherlands.* The Netherlands operates a student loan system where repayments are income-dependent, similar to the UK model, ensuring that repayments are manageable for graduates. This system supports students from various socioeconomic backgrounds in accessing higher education. Dutch universities are increasingly engaging their alumni networks for funding, often through targeted campaigns that fund specific projects or scholarships, contributing significantly to university budgets.

*Finland.* Finland uses a variety of government and EU-funded grants to promote innovation in university settings. These grants support specific research initiatives that have potential commercial applications or societal benefits. Finland has developed effective PPP models in areas like technology and environmental science, which attract significant private and EU funding. These partnerships not only support academic research but also foster economic development and innovation.

*Spain.* Facing reductions in traditional public funding, some Spanish universities have turned to crowdfunding to support specific projects, from scientific research to social programs. This method has enabled them to continue offering innovative projects and programs despite financial constraints. Spanish universities often seek corporate sponsorships for academic chairs, research projects, and infrastructure development, providing a crucial funding stream that complements more traditional sources.

Alternative funding mechanisms across the EU demonstrate both the diversity and the adaptability of financing strategies in higher education. These methods help bridge the gap between decreasing public expenditure and growing financial needs within universities. While student loans are a common thread across many countries, their impact on student debt and long-term financial freedom is a concern. Meanwhile, PPPs, crowdfunding, and alumni funding offer substantial support, driving innovation and maintaining quality education, albeit with varying degrees of success and sustainability.

Each country's approach is tailored to its unique economic, cultural, and educational landscape, showing that while alternative funding can significantly enhance educational resources, it requires careful management and strategic alignment with broader educational policies to be truly effective.

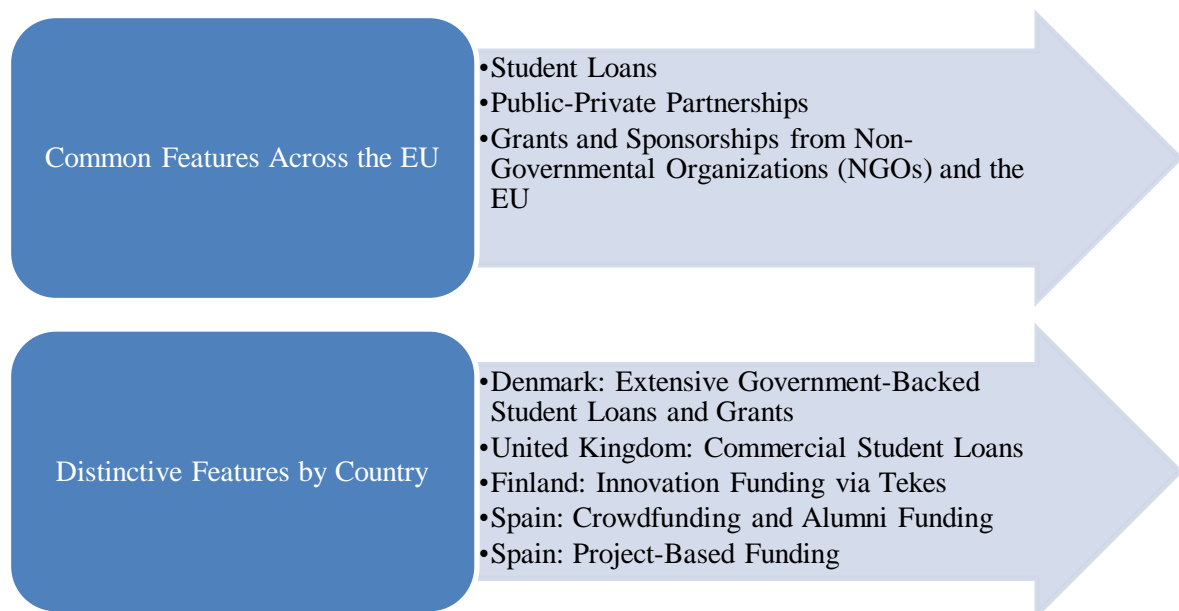
The impact of alternative funding models on the availability and quality of higher education in EU countries is presented in Table 3.

**Table 3. Results of a comparative analysis of alternative funding models in EU countries**

Comparative Outcomes	Description
Accessibility	Student loans, when managed well as in Finland and the Netherlands, increase accessibility by enabling more students to afford higher education. However, high debt models like in the UK can deter lower-income students
Innovation	Countries with strong PPPs, such as Germany, often lead in innovation because these partnerships directly fund and motivate research that has immediate application in industries
Sustainability	While alumni contributions and crowdfunding can provide significant funds, they lack the predictability and consistency required for long-term financial planning
Equity	There is a risk that reliance on private funding sources can lead to inequities, where wealthier institutions and students have more opportunities compared to others

Source: developed by authors

Alternative funding mechanisms for university education in the European Union (EU) are becoming increasingly important as countries seek to diversify funding sources beyond traditional government and private sector contributions. From the results of the analysis, both general trends and differences in alternative financing in EU member states were studied, focusing on student loans, public-private partnerships, crowdfunding and revenue sharing agreements (Figure 3).



**Figure 3. The common features and differences of alternative funding of university education in the European Union in terms of impact on accessibility, quality, and sustainability of education**

Source: developed by authors

The *common features* of alternative funding of university education Across the EU:

1. *Student Loans*. Almost all EU countries offer some form of student loan system. These loans generally aim to ensure that financial barriers do not prevent qualified students from pursuing higher education. The terms and conditions, such as interest rates, repayment thresholds, and forgiveness policies, vary but typically are designed to be manageable to encourage higher education uptake.

2. *Public-Private Partnerships (PPPs)*. Public-private partnerships are increasingly utilized to fund infrastructure development, research initiatives, and even specific educational programs. These partnerships often leverage private sector efficiencies and funding to achieve public sector educational goals, creating mutually beneficial outcomes for educational institutions and private entities.

3. *Grants and Sponsorships from Non-Governmental Organizations (NGOs) and the EU*. Various EU-wide and international NGOs, along with EU institutional programs, provide grants and sponsorships that supplement traditional funding sources. These are particularly significant in promoting research, mobility (such as through the Erasmus+ program), and specific areas like technological innovation or green energy.

The *distinctive features* of government funding of university education across the EU:

1) Denmark: Extensive Government-Backed Student Loans and Grants. Denmark offers a generous system of student loans and grants, known as SU (Statens Uddannelsesstøtte). The system is notable for providing subsidies that cover living expenses during university, which significantly reduces the financial burden on students and increases accessibility to higher education.

2) United Kingdom: Commercial Student Loans. Pre-Brexit, the UK had one of the most extensive student loan systems, with loans covering tuition and living costs. Post-study repayment is income-contingent, which reduces the financial pressure on graduates until they reach a certain income level. Additionally, private companies also play a role in providing student finance, a relatively unique feature in the EU context.

3) Finland: Innovation Funding via Tekes. Finland utilizes Tekes (the Finnish Funding Agency for Technology and Innovation) to support university research and development projects. This not only boosts the funding available for universities but also ties the educational sector closely with industry innovation, enhancing the practical impact of university research.

4) Spain: Crowdfunding and Alumni Funding. Facing cuts in traditional public funding, Spanish universities have increasingly turned to crowdfunding platforms and alumni networks to finance specific projects or scholarships. This model has grown especially among newer institutions and is complemented by traditional funding methods.

5) Germany: Tax Incentives for Corporate Sponsorship. Germany offers tax incentives to companies that invest in higher education, either through direct funding or partnerships. This creates a favorable environment for businesses to contribute to educational funding, which helps universities diversify their funding sources beyond government allocations and tuition fees.

Alternative funding in the EU reflects a blend of traditional and innovative financial mechanisms adapted to the unique educational, economic, and cultural landscapes of the member states. While student loans and public-private partnerships form the backbone of alternative funding across the EU, newer models like income-share agreements and crowdfunding are gaining traction. These approaches not only enhance the financial sustainability of universities but also potentially increase the alignment between educational outcomes and economic needs. As EU countries continue to explore these alternatives, they offer valuable lessons on how to support diverse and adaptive higher education systems in an ever-changing global economy.

**Conclusions.** This comparative analysis reveals significant diversity in the funding models for university education within the European Union, reflecting the varied economic, cultural, and political contexts of the member states. Key findings include:

1. **Government Funding:** Countries like Germany and Sweden, which provide high levels of government funding and minimal tuition fees, achieve greater accessibility and higher enrollment rates. However, these models face challenges in financial sustainability, particularly under economic strain.
2. **Private Funding:** Nations such as the United Kingdom rely heavily on private funding through high tuition fees supported by extensive loan systems. This approach often results in higher institutional autonomy and potential for innovation but raises concerns about student debt and equity of access.
3. **Alternative Funding:** Alternative funding mechanisms, including student loans, public-private partnerships, and crowdfunding, play an increasingly crucial role in bridging funding gaps. These mechanisms contribute to innovation and flexibility but require careful management to ensure they do not exacerbate inequalities or compromise educational quality.
4. **Policy Influence:** EU policies and initiatives, such as the Bologna Process, significantly impact funding strategies by promoting standardization and cooperation among higher education institutions across the continent.

**Author contributions.** The authors contributed equally.

**Disclosure statement.** The authors declare no conflict of interest.

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