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SOTTO-MAYOR MACHADO David

Atlântica - Instituto Universitário  
Essatla - Escola Superior de Saúde Atlântica  
<https://orcid.org/0000-0002-2485-7987>  
e-mail: [davidsm@uatlantica.pt](mailto:davidsm@uatlantica.pt)

RADIONOVA Yana

Poltava State Agrarian University  
<https://orcid.org/0000-0001-9869-0940>  
e-mail: [yana.radionova@pdau.edu.ua](mailto:yana.radionova@pdau.edu.ua)

## HIGHER EDUCATION MANAGEMENT IN THE BANI CONDITIONS: INTERNATIONAL PROJECTS AS A TOOL OF INSTITUTIONAL SUSTAINABILITY (A COMPARATIVE UKRAINIAN-PORTUGUESE ANALYSIS)

*The article analyzes the development of international project activities in higher education institutions under the conditions of increasing environmental complexity, based on the conceptual framework of the BANI model. In modern conditions, universities are increasingly facing systemic fragility, organizational pressure, and the non-linearity of management processes, which requires the transformation of traditional governance approaches.*

*International project activity, particularly within the Erasmus+ Programme, is becoming not only a tool of internationalization, but also an important mechanism for enhancing institutional resilience and adaptability. This is evidenced by the growing number of international partnerships, the intensification of participation in grant programs, and the increasing role of project-based management in university development.*

*The study is based on a comparative analysis of Poltava State Agrarian University (Ukraine) and Atlântica – Instituto Universitário (Portugal). It is established that international project activities in both institutions demonstrate a tendency toward expansion, although they differ significantly in terms of structural formalization, digitalization, and management practices.*

*The Ukrainian case is characterized by a high level of application activity and rapid expansion of international partnerships, which, however, is accompanied by increased workload and insufficient institutionalization of project management processes. In contrast, the Portuguese case demonstrates a more balanced approach, combining diversification of funding sources, partial institutionalization of project management, and the use of flexible digital tools.*

*It is determined that the effectiveness of international project activities depends on several key factors, including diversification of partnerships, institutionalization of management processes, implementation of risk management practices, and the level of digitalization. Based on these factors, a conceptual model of BANI-resilient university governance is proposed, as well as a BANI Resilience Index for assessing institutional adaptability.*

*The results of the study confirm that international projects contribute to increasing the sustainability and competitiveness of higher education institutions and act as a strategic tool for their adaptation in a complex and dynamic environment.*

*Keywords: BANI model, higher education governance, institutional resilience, international project management, Erasmus+ Programme, university internationalization, digital transformation in higher education, risk management in HEIs, and comparative analysis.*

SOTTO-МАЙОР МАШАДУ Давід

Атлантичний університетський інститут  
Вища школа охорони здоров'я «Атлантика», Португалія

РАДІОНОВА Яна

Полтавський державний аграрний університет

## УПРАВЛІННЯ ЗАКЛАДАМИ ВИЩОЇ ОСВІТИ В УМОВАХ BANI: МІЖНАРОДНІ ПРОЄКТИ ЯК ІНСТРУМЕНТ ІНСТИТУЦІЙНОЇ СТІЙКОСТІ (ПОРІВНЯЛЬНИЙ УКРАЇНСЬКО-ПОРТУГАЛЬСЬКИЙ АНАЛІЗ)

*У статті проаналізовано розвиток міжнародної проєктної діяльності закладів вищої освіти в умовах зростаючої складності зовнішнього середовища на основі концептуальної рамки моделі BANI. У сучасних умовах університети дедалі частіше стикаються із системною крихкістю, організаційним тиском і нелінійністю управлінських процесів, що зумовлює необхідність трансформації традиційних підходів до управління.*

*Міжнародна проєктна діяльність, зокрема в межах програми Erasmus+, стає не лише інструментом інтернаціоналізації, а й важливим механізмом підвищення інституційної стійкості та адаптивності. Про це свідчать зростання кількості міжнародних партнерств, активізація участі у грантових програмах та посилення ролі проєктно-орієнтованого управління в розвитку університетів.*

*Дослідження базується на порівняльному аналізі Полтавського державного аграрного університету (Україна) та Atlântica – Instituto Universitário (Португалія). Встановлено, що міжнародна проєктна діяльність в обох установах демонструє тенденцію до розширення, однак суттєво відрізняється за рівнем структурної формалізації, цифровізації та управлінських практик.*

*Український кейс характеризується високою активністю подання заявок і швидким розширенням міжнародних партнерств, що водночас супроводжується зростанням навантаження та недостатнім рівнем інституціоналізації процесів управління проєктами. Натомість португальський кейс демонструє більш збалансований підхід, який поєднує диверсифікацію джерел фінансування, часткову інституціоналізацію проєктного менеджменту та використання гнучких цифрових інструментів.*

*Визначено, що ефективність міжнародної проектної діяльності залежить від низки ключових факторів, зокрема диверсифікації партнерств, інституціоналізації управлінських процесів, впровадження практик управління ризиками та рівня цифровізації. На основі цих факторів запропоновано концептуальну модель управління університетом, стійкого до викликів BANI, а також індекс BANI-стійкості для оцінювання адаптивності інституцій.*

*Результати дослідження підтверджують, що міжнародні проекти сприяють підвищенню стійкості та конкурентоспроможності закладів вищої освіти і виступають стратегічним інструментом їх адаптації в умовах складного та динамічного середовища.*

*Ключові слова: модель BANI, управління закладами вищої освіти, інституційна стійкість, управління міжнародними проектами, програма Erasmus+, інтернаціоналізація університетів, цифрова трансформація у вищій освіті, управління ризиками у ЗВО, порівняльний аналіз.*

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## STATEMENT OF THE PROBLEM

### AND ITS CONNECTION WITH SIGNIFICANT SCIENTIFIC AND PRACTICAL OBJECTIVES

The contemporary operating environment of higher education institutions (HEIs) is increasingly characterized by volatility, uncertainty, and systemic complexity. In recent years, these conditions have been conceptualized through the BANI model, which describes systems as brittle, anxious, non-linear, and incomprehensible. Within this paradigm, traditional hierarchical and administrative governance models demonstrate decreasing effectiveness, necessitating a transition toward adaptive, flexible, and resilience-oriented management approaches.

In this context, international project activities particularly those implemented under the Erasmus+ Programme are undergoing a functional transformation. Beyond their conventional role as instruments of internationalization, such projects increasingly serve as mechanisms for institutional adaptation, knowledge exchange, and strategic development. They contribute not only to academic mobility and cooperation but also to the formation of managerial competencies, organizational learning, and institutional resilience.

Existing research predominantly focuses on the role of internationalization in enhancing the global competitiveness of universities, as well as on project-based collaboration as a driver of innovation. However, limited attention has been paid to the integration of international project activities into broader governance frameworks, particularly in relation to resilience under conditions described by the BANI paradigm. Furthermore, comparative analyses of how different institutional contexts operationalize project-based governance strategies remain insufficiently developed.

This study addresses this gap by examining how international project activities function as a tool for BANI-oriented sustainable management in higher education. The research is based on a comparative analysis of two institutional cases: Poltava State Agrarian University (Ukraine) and Atlântica – Instituto Universitário (Portugal), representing different levels of structural formalization, digital maturity, and project management practices.

The purpose of this study is to substantiate the role of international project activities as a mechanism of institutional resilience and to develop a conceptual model of BANI-resilient university governance.

## REVIEW OF RECENT RESEARCH AND PUBLICATIONS

Research on the internationalization of higher education and the development of university systems has a long-standing tradition in contemporary academic literature. In classical works, J. Knight conceptualizes internationalization as a process of integrating international, intercultural, or global dimensions into the core functions of higher education institutions, including teaching, research, and governance [1]. The author emphasizes that internationalization is a dynamic process that gradually becomes a strategic component of university development.

In subsequent studies, J. Knight further refines the conceptual understanding of internationalization, highlighting its institutional nature and its integration into university governance systems [2].

The issues of innovation development in higher education and its interaction with other sectors of the economy are thoroughly examined within the framework of the Triple Helix model proposed by H. Etzkowitz and L. Leydesdorff. According to this model, universities, government, and industry form an interactive system of knowledge production and innovation that defines contemporary approaches to higher education development [3].

A significant contribution to the understanding of internationalization processes is provided by H. de Wit, who argues that internationalization is gradually shifting from a supplementary function to a core structural element of university policy and governance [4].

Contemporary higher education research also highlights increasing global competition among universities, the strengthening of international academic networks, and the growing importance of resource diversification. S. Marginson emphasizes that universities are increasingly operating within global knowledge systems that require adaptive governance and strategic positioning [5].

Similarly, P. Altbach and J. Knight analyze international higher education as a system of motivations and practices shaping the global integration of universities and their participation in transnational academic networks [6].

Issues of university governance and institutional autonomy are widely discussed in reports of the European University Association (EUA), which highlight that the level of institutional autonomy significantly influences the ability of universities to respond to external challenges and effectively implement international projects [7].

Furthermore, UNESCO reports stress that higher education institutions operate in an increasingly unstable global environment, requiring flexible governance models, digital transformation, and enhanced international cooperation as mechanisms of institutional resilience [8].

OECD analytical reports emphasize structural changes in education systems related to digitalization, international mobility, and the emergence of new governance models in higher education institutions [9].

The European Commission, in its Erasmus+ Programme Guide, identifies international projects as a key instrument for fostering cooperation between higher education institutions, contributing not only to academic mobility but also to institutional development, digital transformation, and innovation in governance practices [10].

Despite the significant body of research, the integration of international project activities into institutional governance systems of higher education institutions, as well as comparative analyses of project-based management models across different national contexts, remains insufficiently explored.

### **IDENTIFICATION OF UNRESOLVED ASPECTS OF THE GENERAL PROBLEM**

The concept of resilience in higher education has gained increasing attention in the context of global crises, digital transformation, and institutional uncertainty. Resilience is generally understood as the capacity of an organization to absorb disturbances, adapt to changing conditions, and maintain core functions while undergoing transformation. In the context of HEIs, resilience is closely linked to governance structures, resource diversification, and the ability to engage in international collaboration.

The BANI model, introduced as an evolution of the VUCA framework, provides a more nuanced understanding of contemporary systemic challenges. Unlike VUCA, which emphasizes volatility and uncertainty, BANI highlights structural fragility, psychological pressure, non-linear causality, and the incomprehensibility of complex systems. This shift has significant implications for university governance, requiring more adaptive, decentralized, and human-centered management approaches.

Internationalization has long been considered a strategic priority for universities, particularly within the European Higher Education Area. Programs such as the Erasmus+ Programme facilitate academic mobility, institutional partnerships, and collaborative research. Recent studies suggest that international projects also contribute to organizational learning, capacity building, and the development of managerial competencies within institutions.

At the same time, project management in higher education is evolving from a purely administrative function to a strategic governance tool. The increasing complexity of international consortia, funding mechanisms, and regulatory requirements necessitates the adoption of structured project management practices, digital tools, and risk management frameworks. However, the level of institutionalization of these practices varies significantly across institutions.

Despite the growing body of literature on internationalization and resilience, there remains a lack of integrated approaches that conceptualize international project activity as a mechanism for managing institutional sustainability within the BANI paradigm. In particular, comparative analyses that examine how different institutional models respond to BANI-related challenges through project-based governance are limited.

### **DEFINITION OF THE AIM AND OBJECTIVES OF THE ARTICLE**

This study employs a comparative case study approach to analyze the role of international project activities in shaping BANI-resilient governance in higher education institutions. The research focuses on two cases: Poltava State Agrarian University (Ukraine) and Atlântica – Instituto Universitário (Portugal).

The selection of cases is based on their contrasting institutional characteristics, including differences in organizational structure, digitalization level, and project management practices. This allows for the identification of both common challenges and divergent strategies in responding to BANI conditions.

The analysis is based on qualitative data, including institutional reports, project documentation, and publicly available information on international activities. Key indicators used in the study include: number of international projects and applications; scale and dynamics of partnership networks; level of institutionalization of project management structures; degree of digitalization of project processes; presence of risk management practices.

To operationalize the BANI model, four analytical dimensions are applied:

1. Brittle – institutional fragility and dependency on limited resources;
2. Anxious – organizational stress and workload distribution;
3. Non-linear – complexity of processes and risk management capacity;
4. Incomprehensible – level of procedural transparency and digitalization.

The comparative analysis enables the identification of patterns of adaptation and the development of a conceptual model of BANI-resilient university governance.

## PRESENTATION OF THE MAIN RESEARCH MATERIAL

Poltava State Agrarian University (PSAU) is a leading higher education institution in Ukraine specializing in the agro-industrial sector, comprising educational and research institutes, faculties, and departments. Over the past five years, PSAU has implemented three projects within the Erasmus+ Programme, as well as one international project with Swedish partners, one with British partners, and one with Polish partners [11].

At the same time, in 2025, more than 20 grant applications were submitted to various international funding programs, which has resulted in a substantial workload for the International Relations Department as the primary coordinating unit. During the same period, the number of international partners increased from over 40 to more than 50 institutions, indicating a positive trend in the expansion of international cooperation.

However, despite these achievements, the university has not established a dedicated project management office. Furthermore, the absence of integrated digital project management systems significantly complicates the processes of application preparation, internal communication, and project monitoring.

EIA – Ensino, Investigação e Administração, S.A. represents a private higher education institution of public utility, founded in 1996 and headquartered in Oeiras, Lisbon. Through its academic structures, particularly Atlântica – Instituto Universitário and ESSATLA, the organization integrates education, research, and innovation in advancing the generation and dissemination of scientific and technological knowledge. The institution is characterized by an international student body and active participation in European programs, positioning itself as an organization committed to digitalization, inclusion, sustainability, and market-oriented skills development [12].

The International Relations Office plays a key role in the implementation of the institution's internationalization strategy, including the establishment and management of international partnerships and projects. Within this framework, responsibilities related to project management—covering both funding applications and project implementation, whether the institution acts as a coordinator or partner—are assigned to three professionals within the office.

Over the last five years (considering projects initiated from 2020 with ongoing implementation), a total of 31 international projects have been carried out across the EIA institutional framework, including Atlântica – Instituto Universitário and ESSATLA. This figure reflects the aggregated institutional activity rather than that of a single academic unit, thereby capturing the full scale of international project engagement.

In the 2024–2025 academic year, the institution participated in 10 Erasmus+ KA2 grant applications, including four projects coordinated by the institution and six in which it acted as a partner. This distribution indicates a balanced level of involvement in both coordination and partnership roles within international consortia.

During the analyzed period, the institution demonstrates a dynamic and continuously evolving international partnership network. When considering unique external partners involved in projects annually (excluding internal partners and duplicate entries within the same year), the following distribution is observed: 19 partners (2020); 15 partners (2021); 17 partners (2022); 21 partners (2023); 18 partners (2024); 12 partners (2025).

In total, the number of unique external partners over the analyzed period amounts to 62. It should be noted that alongside newly established collaborations, several strategic partners have consistently participated in multiple projects, indicating the presence of stable and long-term cooperative relationships.

Digital tools for international project management are applied selectively, depending on the requirements of specific projects. In particular, within consortia involving Danmar Computers, the AdminProject system is utilized as a specialized digital platform for project management. However, at the institutional level, no single proprietary system is adopted; instead, the organization relies on flexible digital collaboration environments such as Microsoft 365 and Google Workspace.

The Inclusive Higher Education Training Program (iHETP) serves as a representative example of a complex project management case. The complexity of this project stems from the fact that its coordinator from Atlântica has neurological and physical disabilities acquired during their studies. This personal experience has significantly shaped the project's focus, placing accessibility and inclusion at the core of its design and implementation.

Consequently, the effective execution of the project required going beyond standard project management procedures. In particular, it necessitated ensuring both digital accessibility (including the development of accessible learning materials and platforms) and physical accessibility (such as careful planning of international mobility activities).

Despite the challenges encountered during implementation, the project achieved a final evaluation score of 95/100, indicating a high level of success. Moreover, its outputs remain relevant and accessible due to their distribution under the Creative Commons 4.0 license, demonstrating that inclusion and accessibility were not supplementary elements but fundamental principles of the project.

In addition, the institution is actively engaged in submitting project applications aimed at promoting the inclusion of Ukrainian citizens within the European space and strengthening cooperation with Ukrainian organizations. However, to date, it has not yet had the opportunity to coordinate or participate in projects involving partners based in Ukraine.

Table 1

**Comparative indicators of international project activity (PSAU vs EIA)**

Indicator	PSAU (Ukraine)	EIA (Portugal)
Number of projects (5 years)	6	31
Number of partners	59	62
Applications (2025-2026)	15+	10
Project office	Not established	Functionally integrated
Digital systems	Absent	Partially implemented

**Interpretation of BANI measurements in international project activities***1. Brittle (fragility)*

In the Ukrainian case, fragility is manifested by the lack of a specialized project office combined with a relatively high volume of application activity. At the same time, it is important to note that diversification of partnerships (growth from 40 to 50+) partially mitigates this vulnerability by reducing strategic dependence on a limited number of actors.

In contrast, the Portuguese case demonstrates a more structurally consolidated approach to mitigating institutional fragility. This is primarily achieved through the diversification of funding channels and the systematic application of adaptive risk management practices.

In particular, the institution participates in a wide range of funding programmes, including European frameworks (such as Erasmus+, EU4Health, and Horizon initiatives), national funding schemes, and international cooperation projects (e.g., EU–Africa and EU–America programmes). In addition, collaboration extends to private-sector partners, including companies in aeronautical research, with some initiatives being privately funded.

Such diversification significantly reduces dependency on a single funding source and enhances overall institutional robustness in response to external environmental changes.

Furthermore, despite the absence of a proprietary risk management system, the institution applies a pragmatic and embedded approach to risk mitigation. Risk management procedures are conducted at project level using collaborative digital platforms (Microsoft 365, Google Workspace) for documenting risk matrices and contingency plans.

Taken together, these practices indicate that funding diversification and embedded risk management jointly function as key mechanisms for reducing institutional fragility.

*2. Anxious (anxiety)*

From the perspective of organizational pressure, submitting more than 20 applications per year creates a significant increase in workload and institutional stress. This effect is further intensified by the limited level of digitalization, which increases the administrative burden on staff.

A similar tendency toward workload pressure can also be observed in the Portuguese case; however, the mechanisms of response differ considerably. Atlântica experiences periodic peaks of organizational stress, particularly during application cycles when multiple deadlines overlap with ongoing project implementation.

Given the relatively small size of the International Relations Office, these periods may lead to temporary overload.

To address this challenge, the institution implements flexible organizational arrangements, including remote work and adaptable schedules, which allow for more efficient workload distribution and better accommodation of individual staff constraints, including the disabilities of one of its members.

In addition, the collaborative team structure plays a key stabilizing role in mitigating workload stress. Shared responsibility in both project design and implementation enables internal support and ensures operational continuity during high-pressure periods.

Although these measures do not fully eliminate workload peaks, they contribute significantly to maintaining staff well-being and organizational stability in a time-sensitive environment.

*3. Non-linear (non-linearity)*

In international consortia, even minor changes can generate large-scale and unpredictable managerial consequences. This complexity is further amplified in the absence of automated coordination systems.

Within this context, risk management becomes a central differentiating factor between institutional approaches. At Atlântica, risk management is fully integrated into both project design and internal organizational processes.

All international project applications require a systematic identification of potential risks, accompanied by clearly defined mitigation strategies. Consequently, risk assessment is an obligatory component of project development.

From an organizational perspective, non-linearity is addressed through redundancy and knowledge distribution mechanisms. Responsibilities, access rights, and key data are deliberately distributed among team members in order to minimize dependency on any single individual.

This structural redundancy ensures operational continuity in cases of sudden unavailability of staff. In such situations, any team member can assume responsibility for critical tasks, maintaining workflow stability.

In extreme cases, temporary or permanent replacement of staff is also possible, ensuring uninterrupted project execution.

It is important to emphasize that this approach is not linked to individual circumstances such as disability or illness, but rather reflects an organizational culture based on systemic uncertainty and preparedness.

4. *Incomprehensible*

The increasing complexity of financial and regulatory reporting contributes to what can be described as administrative opacity. At the same time, participation in international programmes also contributes to the gradual standardization of procedures.

Against this background, Atlântica applies a combined strategy of compliance, standardization, and adaptive learning. In addition to adherence to international, European, and national regulatory frameworks, the institution operates according to internal rules and strategic documents that are publicly available and aligned with its mission and vision.

This ensures both consistency in project implementation and full compliance with eligibility, reporting, and ethical requirements.

From an operational standpoint, detailed documentation of expenditures, activities, and project outputs is systematically maintained, taking into account the possibility of audits at any stage.

Even in cases where formal reporting templates are not strictly required, internal consistency standards are maintained to ensure data integrity.

Although no single proprietary system is used for standardization, collaborative digital tools and internal guidelines ensure operational coherence. At the same time, the institution remains open to adopting innovative practices introduced by project partners.

Based on the above analysis, a structured BANI-resilient university governance model can be formulated. This model includes four interdependent dimensions:

1. Antifragility – diversification of partnerships and programs.
2. Anti-anxiety – institutionalization of the project office.
3. Anti-nonlinearity – implementation of risk management.
4. Anti-incomprehensibility – digitalization of management processes.

International projects act as an integration mechanism that combines these four areas and forms the institutional sustainability of the university in the BANI environment.

In this sense, international project activity is transformed from a tool of internationalization into a strategic governance mechanism for university resilience and sustainability.

A comparative analysis of Ukrainian and Portuguese experiences allows for the identification of shared BANI-related challenges, the differentiation of governance responses, and the development of a generalized adaptive management model for higher education institutions.

Finally, this analytical framework opens the possibility for further methodological development, particularly in terms of quantitative measurement and digital modeling of institutional resilience.

Table 2

**Comparative Characteristics of International Project Management Models under BANI Conditions (PSAU vs Atlântica)**

Dimension	Ukrainian Model (PSAU)	Portuguese Model (Atlântica)
<b>Antifragility</b> (diversification of partnerships and programmes)	Increasing the number of organizations in the international partnership network from above 40 to above 50; having a relatively modest portfolio of implementations (about six initiatives over five years); Witnessing an increase in the number of applications (above 20 by 2025).	Diversification in terms of funding schemes appears to be high, including projects under the Erasmus+, Horizon, EU4Health, EU-Africa, and private sectors. It shows strong capability in implementation through the development of 31 projects within five years, while sustaining its network with a total of 62 partners, both existing and new.
<b>Anti-anxiety</b> (institutionalisation of project structures and workload management)	The absence of a dedicated project management division whose functions are centralized within the International Relations Division is causing increasing administrative strain due to a considerable number of applications received.	Structure of an International Relations Office that consists of three people, whose responsibilities include both application design and project implementation; Peak loads are acknowledged and overcome by using flexible organization strategies, such as telecommuting and time management.
<b>Anti-nonlinearity</b> (risk management and adaptive capacity)	There seems to be no indication of any formalized or systematic risk management structures; vulnerability to non-linear consequences is heightened by limited digital coordination tools.	Risk assessments to be systematically integrated into the project management process; operational redundancy ensured by distributing responsibility, resource access, and continuity planning; risk consciousness instilled organization-wide.
<b>Anti-incomprehensibility</b> (digitalisation and procedural standardisation)	Lack of formal institutions for digital project management; low level of standardization; complexity of administration hampering coordination and monitoring efforts.	Adoption of certain technologies (such as AdminProject in specific consortiums), combined with leveraging collaboration software environments (like Microsoft 365 and Google Workspace), and focusing on documentation, audit preparation, and procedure standardization.

In this regard, two different but essentially similar ways of managing international project activities in a BANI (brittle, anxious, non-linear, incomprehensible) setting emerge. First, the Ukrainian case is characterised by high intensity of strategies used with poor structural formalisation and digitalisation resulting in increased workload and fragility of the system. Second, the Portuguese case represents a combination of institutionalisation, diversification of operations, and capacity for project implementation along with some structural elements of project management despite the lack of centralisation.

Most importantly, both cases show an ability to adapt to external factors through certain organisational configurations. Namely, in the Ukrainian case, this adaptation takes place through enhanced cooperation and increased use of foreign funding. For the Portuguese case, diversification of funding sources, inherent risk management, and gradual digitalisation represent means of adapting to the conditions.

In light of the above, it is possible to argue that the results support the idea of a BANI-resilient governance model which is defined by several dimensions:

- Antifragility – achieved through expansion and diversification of partnerships and funding mechanisms.
- Anti-anxiety – dependent on the extent of institutionalisation and distribution of workload among stakeholders.
- Anti-nonlinearity – characterised by presence or absence of risk management and organisational redundancies.
- Anti-incomprehensibility – linked to the degree of digitalisation and standardisation necessary for coordinating processes.

To enhance analytical rigor, the study proposes a BANI Resilience Index (BRI), calculated as a weighted composite indicator of four dimensions: antifragility, anti-anxiety capacity, non-linearity management, and incomprehensibility reduction. Each dimension is operationalized through a set of normalized indicators, allowing for comparative assessment of institutional resilience across different contexts.

$$BRI = \sum_{k=1}^4 W_k * D_k \quad (1)$$

where, BRI – BANI Resilience Index;  $D_k$ – standardized score of each BANI dimension;  $w_k$ – weight of each dimension (default:  $w_k = 0.25$ , or adjusted depending on institutional priorities).

The model consists of four analytical dimensions:

1.  $D_1$  (Antifragility) — refers to the system's ability to diversify partnerships and resource sources and to enhance resilience through the expansion of interactions.
2.  $D_2$  (Anti-anxiety capacity) — characterizes the level of institutionalization of management processes and the efficiency of workload distribution.
3.  $D_3$  (Non-linearity management) — defines the organization's ability to adapt to complex, unpredictable, and indirect cause-and-effect relationships.
4.  $D_4$  (Incomprehensibility reduction) — refers to reducing uncertainty and opacity through process digitalization, procedural standardization, and increased managerial transparency.

Each dimension is calculated as a normalized composite indicator:

$$D_k = \frac{1}{n} \sum_{j=1}^n X_{kj} \quad (2)$$

The operationalization of the proposed BANI-resilience framework is based on a set of measurable indicators for each analytical dimension. Antifragility ( $A_f$ ) is assessed through the number of funding sources, the number of international partners, and the diversity of funding programmes (e.g., Erasmus+, Horizon Europe). Anti-anxiety capacity ( $A_a$ ) is measured by the presence of a project management office, workload distribution among staff, and the use of flexible work arrangements. Non-linearity management ( $A_n$ ) is operationalized through indicators such as the existence of formal risk management procedures, redundancy in role allocation, and continuity planning. Finally, incomprehensibility reduction ( $A_i$ ) is captured through the level of digitalization, standardization of procedures, and documentation consistency.

The proposed index allows assessing the level of institutional resilience of higher education institutions in the BANI environment.

Within this framework, it becomes clear that international projects act as a governance tool capable of addressing all of the mentioned aspects at once while ensuring institutional sustainability.

## CONCLUSIONS AND DIRECTIONS FOR FURTHER RESEARCH

The present study demonstrates that international project activity in higher education institutions has evolved beyond its traditional function of supporting internationalization and has become a strategic governance mechanism for ensuring institutional resilience under BANI conditions. The comparative analysis of Poltava State Agrarian University (Ukraine) and Atlântica – Instituto Universitário (Portugal) confirms that universities respond to increasing environmental complexity through different, yet functionally convergent, organizational configurations.

The findings indicate that both institutional cases are actively adapting to the challenges of brittleness, anxiety, non-linearity, and incomprehensibility; however, the nature and effectiveness of these responses differ significantly. The Ukrainian model is characterized by high intensity of international engagement combined with limited structural formalization and insufficient digitalization, which increases operational workload and systemic vulnerability. In contrast, the Portuguese model demonstrates a more balanced and structured approach, based on diversification of funding sources, partial institutionalization of project management functions, embedded risk management practices, and gradual digital transformation.

At the same time, the study confirms that institutional resilience in BANI conditions is not determined solely by the scale of international project activity, but rather by the quality of governance mechanisms supporting it. In particular, the effectiveness of adaptation depends on four interrelated dimensions: antifragility (diversification of partnerships and funding sources), anti-anxiety capacity (institutionalization and workload distribution), non-linearity management (risk management and organizational redundancy), and incomprehensibility reduction (digitalization and procedural standardization). These dimensions collectively form the basis of a BANI-resilient governance model for higher education institutions.

A key theoretical contribution of this study lies in the conceptualization of international projects as an integrative governance mechanism that simultaneously addresses multiple dimensions of institutional resilience. Furthermore, the proposed BANI Resilience Index (BRI) offers a structured analytical tool for assessing and comparing the adaptive capacity of higher education institutions in complex and uncertain environments.

From a practical perspective, the results suggest that universities aiming to strengthen their institutional resilience should prioritize the institutionalization of project management functions, invest in integrated digital project management systems, ensure systematic implementation of risk management procedures, and promote flexible organizational structures that support workload balance and staff well-being.

Despite these contributions, the study has several limitations. First, it is based on a comparative analysis of only two institutions, which limits the generalizability of the findings. Second, the proposed BANI Resilience Index remains a conceptual framework that requires empirical validation and calibration using quantitative data across a broader range of institutions and national contexts.

Future research should therefore focus on the empirical testing and refinement of the BANI Resilience Index, including the development of standardized measurement scales for each analytical dimension. In addition, further studies should expand the comparative sample to include universities from different educational systems in order to enhance the external validity of the model. Another promising direction involves the integration of digital analytics and artificial intelligence tools into the monitoring of international project performance and institutional resilience. Finally, longitudinal studies could explore the long-term impact of international project engagement on governance transformation, organizational learning, and sustainability in higher education institutions.

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