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Strategic Management of Higher Education Institutions in Conditions of Uncertainty

Abstract. Introduction. Higher education institutions increasingly operate in volatile, complex, and unpredictable environments shaped by demographic decline, digital transformation, geopolitical instability, and shifting policy frameworks. These uncertainties challenge traditional management models and require universities to adopt flexible and evidence-based strategic approaches. The article focuses on conceptualizing the role of strategic management as a core institutional capability that supports stability, adaptability, and mission continuity under volatile conditions; synthesizes existing research on strategic planning, governance, and resilience in higher education, identifying current trends, limitations, and emerging approaches; analyzes key challenges that undermine strategic coherence – including financial constraints, demographic shifts, policy volatility, and geopolitical shocks – and explains why they demand new strategic tools.

Purpose. The purpose of this study is to examine how higher education institutions can design and operationalize effective strategic management frameworks capable of functioning under conditions of persistent uncertainty.

Results. This article examines the evolution and core components of strategic management in higher education, emphasizing scenario planning, agile governance, data-driven decision-making, and mechanisms for institutional resilience. Drawing on recent research and crisis experiences – including the COVID-19 pandemic and geopolitical disruptions affecting Eastern Europe – the study highlights how effective strategic management supports adaptability, financial stability, and long-term sustainability. Special attention is given to the Ukrainian context, where institutions must navigate unprecedented uncertainty while maintaining educational continuity and pursuing modernization.

Conclusions. The analysis demonstrates that strategic management is fundamental to ensuring that higher education institutions remain resilient, competitive, and mission-driven in turbulent conditions.

Keywords: strategic management; management; higher education institutions; uncertainty; resilience; agile governance; scenario planning; data-driven decision-making.

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Стратегічне управління закладами вищої освіти в умовах невизначеності

Анотація. Заклади вищої освіти дедалі частіше функціонують у середовищі, яке характеризується зростанням невизначеності, складністю та непередбачуваністю. Демографічний спад, цифрова трансформація, зміни політики, економічні ризики, а також геополітичні потрясіння формують нові виклики, які суттєво впливають на стратегічні можливості університетів.

Метою цього дослідження є вивчення того, як вищі навчальні заклади можуть розробляти та впроваджувати ефективні системи стратегічного управління, здатні функціонувати в умовах постійної невизначеності.

У статті досліджено еволюцію стратегічного управління у вищій освіті та розкрито його ключові компоненти – формування місії та бачення, ситуаційний аналіз, стратегічні пріоритети, імплементацію, моніторинг та адаптацію. Особливу увагу приділено використанню сценарного планування, agile-підходів та даних для прийняття стратегічних рішень. Продемонстровано, що стратегічне управління є критично важливим інструментом для забезпечення стійкості, конкурентоспроможності та виконання суспільної місії університетів у турбулентних умовах.

Ключові слова: стратегічне управління; менеджмент; ЗВО; невизначеність; стійкість; agile-врядування; сценарне планування; управлінські рішення на основі даних.

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Formulation of the problem. Formulation of the problem. Higher education institutions (HEIs) increasingly operate under conditions of multidimensional uncertainty generated by demographic decline, financial instability, rapid technological change, geopolitical disruptions, and volatile regulatory environments. These challenges undermine the predictability of institutional planning and complicate the establishment of long-term strategic trajectories [1, p. 23; 2, p.30]. As a result, traditional linear and administrative approaches to university management no longer provide sufficient flexibility, responsiveness, or resilience [3, p. 126; 4].

The problem addressed in this study arises from the widening gap between the complexity of the external environment and the limited adaptability of many higher education institutions. The sector must confront declining student cohorts, fluctuating funding, digital acceleration, intensified competition, and crisis-driven disruptions, such as those observed during the COVID-19 pandemic and the geopolitical shocks affecting Eastern Europe. Without robust strategic management frameworks capable of guiding decision-making in unstable environments, institutions risk operational fragmentation, strategic drift, and erosion of academic mission.

Given these challenges, higher education institutions must adopt strategic management approaches that support resilience, agility, and evidence-based decision-making [5; 6, p.1593]. Understanding how HEIs can construct and operationalize such frameworks is essential for strengthening institutional capacity to navigate uncertainty, maintain educational quality, and fulfill societal roles in rapidly changing conditions.

Analysis of recent research and publications. The academic literature on strategic management in higher education demonstrates an ongoing shift from traditional administrative planning toward adaptive, data-driven, and resilience-oriented strategic frameworks. Recent research emphasizes that universities increasingly operate in complex environments shaped by technological, demographic, and geopolitical uncertainties, which has prompted a reconceptualization of how strategic decisions are formulated and implemented. Importantly, scholars point out that strategy in higher education can no longer be understood as a linear process; rather, it requires iterative learning, responsiveness, and a deep awareness of external volatility.

Beerkens [2, p. 40] highlights that the emergence of “big data” in higher education governance has fundamentally transformed strategic oversight by enabling more granular monitoring of performance indicators and institutional health. This technological shift has encouraged universities to adopt more proactive, predictive approaches to planning, moving away from reactive responses. In [7, p.800] authors argue that data-driven leadership strengthens institutional capacity to align strategy with sustainable

development goals, particularly when external shocks disrupt traditional operational models. Their work underscores an important trend: successful strategic management increasingly depends on the ability to interpret complex data environments.

A substantial body of literature also examines how governance structures influence strategic management. Raza et al. [6, p. 1598] show that shared governance arrangements, when functioning effectively, enhance transparency and internal legitimacy, which are crucial for implementing strategic initiatives under uncertain conditions. However, Becker et al. [1, p. 30] note that misalignment between governance actors can impede timely strategic action, especially in crisis situations that require rapid institutional coordination. These insights suggest a recurring challenge: institutions must balance inclusive decision-making with the agility required by contemporary disruptions.

Researchers examining national systems also offer important perspectives relevant to strategic management. Jaworska and Donina [4], analyzing Poland’s reforms under the “Law 2.0” framework, demonstrate how institutional autonomy – when supported by clear strategic mandates – can increase the strategic capacity of HEIs to address long-term uncertainty. Their findings also highlight tensions between managerial logics and academic self-governance, an issue echoed across Central and Eastern European systems. [ieeexplore.ieee.org]

The Ukrainian context provides an especially compelling example of uncertainty-driven strategic transformation. The article [3] illustrates how geopolitical shocks and wartime disruptions necessitate rapid scenario planning, diversification of educational delivery, and the protection of institutional continuity under extreme conditions. This case underscores a broader lesson: when external uncertainty becomes chronic, strategic management must evolve from a planning exercise into a core organizational survival mechanism.

Taken together, recent research demonstrates a consensus that higher education institutions must integrate agility, evidence-based thinking, and multidimensional resilience into their strategic management processes. Yet scholars also stress that strategy must remain rooted in institutional mission and societal responsibility – an important reminder that, even in volatile environments, universities are not merely adapting to change but shaping it.

Formulation of research goals. The purpose of this study is to examine how higher education institutions can design and operationalize effective strategic management frameworks capable of functioning under conditions of persistent uncertainty. While universities traditionally relied on long-term planning cycles and relatively stable environments, contemporary realities – ranging from financial instability and demographic decline to geopolitical disruptions and rapid digitalization

– require new forms of strategic responsiveness. This research therefore seeks to clarify which strategic management practices strengthen institutional resilience and how universities can integrate scenario planning, agile governance, and data-driven decision-making into their strategic processes.

To outline a practical strategic management cycle tailored to HEIs, emphasizing iterative learning, evidence-based analysis, and flexible implementation. To highlight insights from the Ukrainian context, where institutions face extreme uncertainty and must adopt accelerated, crisis-responsive strategies. A distinctive human dimension emerges here: strategic management in higher education is not merely a technical system but a lived organizational practice. It depends on leadership judgment, institutional culture, stakeholder trust, and the willingness to rethink entrenched routines. In conditions of uncertainty, strategy becomes less about predicting the future and more about strengthening the institution's capacity to learn, adapt, and respond. This study therefore combines analytical rigor with a recognition of the interpretive, human-centered nature of strategic work in academia.

Presentation of the main research material. Historical Background: Crises as Drivers of Strategic Transformation. The trajectory of strategic management in higher education has repeatedly been shaped by global crises that exposed institutional vulnerabilities and forced universities to reassess their long-term strategies. For instance, the COVID-19 pandemic disrupted academic operations worldwide, compelling institutions to transition rapidly to online learning, redesign mobility programs, and implement emergency planning measures. As several scholars emphasize, the pandemic accelerated digital transformation and highlighted that universities are no longer insulated from global shocks, but actively embedded within them [8, p. 95; 9, p. 125].

In the case of Ukraine, the full-scale invasion in 2022 intensified strategic uncertainty beyond precedents seen in other systems. Higher education institutions were compelled to adopt emergency resilience planning, ensure continuity of teaching during bombardments, support displaced students, and diversify financial and digital infrastructures. Article [3] illustrates how geopolitical and security-related disruptions forced institutions to move from incremental planning to adaptive, scenario-based strategies that prioritize institutional survival and mission continuity. A human dimension is evident: behind each strategic decision lies the lived reality of faculty, students, and communities navigating extreme instability. This underscores that strategic management is not only a technical framework; it is a societal commitment.

Strategic Management Framework for Higher Education Institutions. Drawing on contemporary management theory and empirical studies, the strategic management process in HEIs can be conceptualized as an iterative cycle that supports organizational stability,

responsiveness, and learning. Unlike rigid five-year plans, modern approaches favor continuous evaluation and dynamic adjustment. Key components and their relations shown in fig. 1.

Challenges in Conditions of Uncertainty. Economic instability complicates long-term budgeting and increases the risk of operational deficits. Many institutions face widening gaps between rising costs and stagnating revenues – particularly in systems where public funding depends on political decisions.

Across Europe and Ukraine, demographic contraction reduces the number of prospective students. Institutions must respond by diversifying recruitment strategies and strengthening lifelong learning pathways. Jaworska and Donina [4] highlight that demographic challenges were a significant factor behind Poland's reforms aiming to modernize governance and improve strategic responsiveness.

Frequent policy shifts undermine institutional predictability. Research shows that universities operating in politically volatile contexts often struggle to secure long-term investments or plan multi-year development agendas [6, p. 1595]

Ukrainian HEIs face unprecedented uncertainty due to war, requiring emergency digitalization, scenario planning, and continuity measures. Researchers demonstrate how crisis conditions can accelerate strategic innovation, but also expose institutional fragility [14; 15].

Strategic Approaches to Managing Uncertainty. Scenario planning broadens institutional imagination by modeling multiple plausible futures. This approach excels in highly uncertain environments, such as pandemics or political instability [5]. Agile governance enables flexible decision-making and rapid response to emerging challenges. Becker et al. [1] stress that agile practices strengthen internal coordination and reduce bureaucratic inertia. Data analytics, dashboards, and real-time monitoring improve risk assessment and strategic execution. Institutions adopting data-driven leadership show higher adaptability and clarity in decision-making.

While not using a full case-study format, selected examples illustrate the practical relevance of strategic management frameworks: Ukrainian HEIs demonstrate that crisis conditions may accelerate digital innovation, adaptive planning, and strengthened societal engagement. Polish HEIs show how institutional autonomy reforms improve the capacity for long-term strategic coherence. European universities have increasingly integrated strategic tools such as data dashboards, risk registers, and scenario-planning workshops to enhance resilience. These examples suggest that uncertainty is not only a threat, but a catalyst for modernization – provided that institutions engage in systematic strategic management.

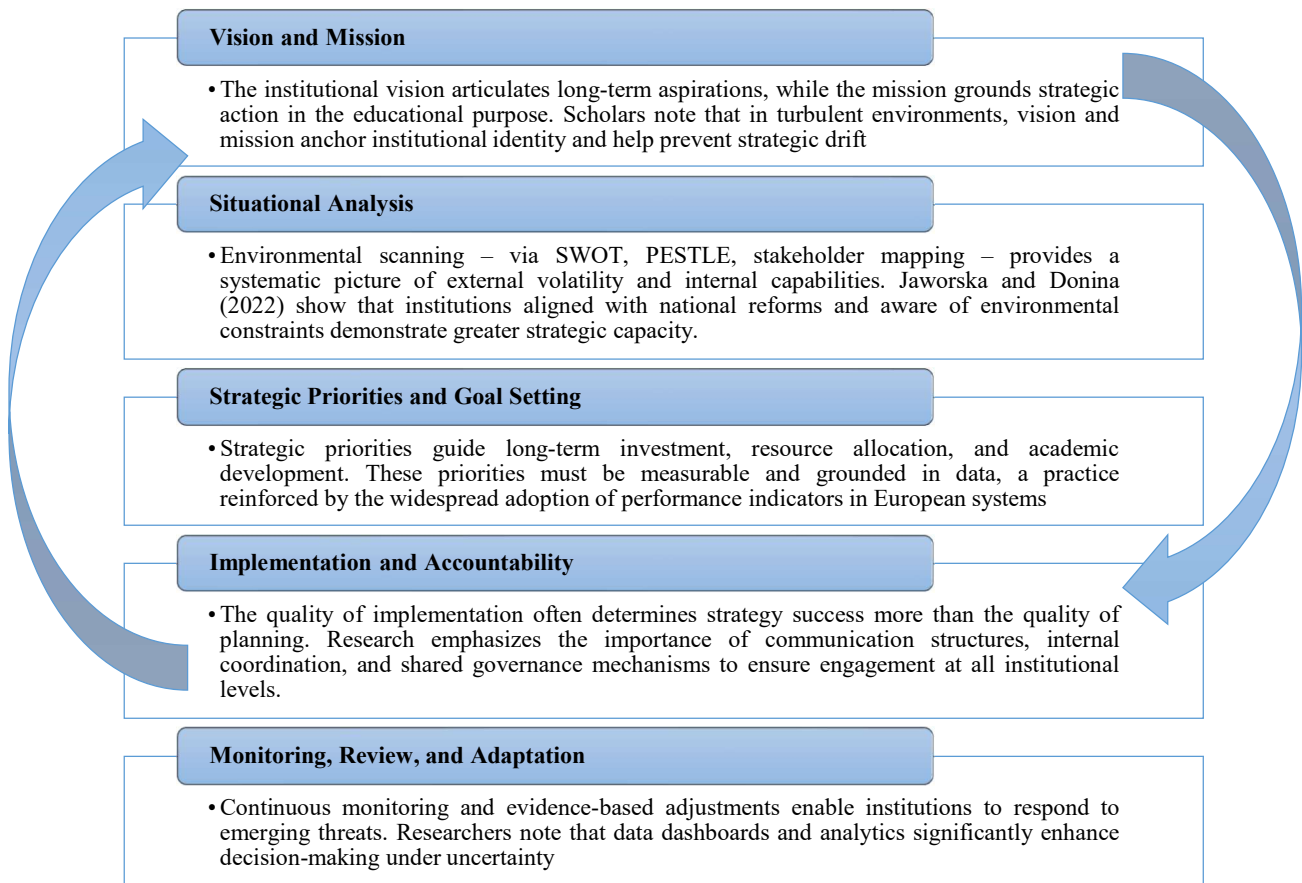


Figure 1 – **Strategic Management Cycle for HEIs Under Uncertainty**

Source: created by author based on [10-13]

Conclusions. Strategic management has become a defining capability for higher education institutions navigating environments marked by continuous uncertainty. As universities confront financial volatility, demographic decline, rapid technological change, and geopolitical instability, the ability to think and act strategically determines not only their short-term resilience but also their long-term viability. The analysis presented in this article demonstrates that effective strategic management must move beyond traditional planning models and embrace flexibility, iterative learning, and evidence-based decision-making.

A central insight is that strategy in higher education is no longer a linear exercise. Instead, it is an ongoing organizational practice that requires institutions to continuously interpret external signals, reassess internal capacities, and recalibrate their actions accordingly. This dynamic approach enables universities to remain aligned with their missions even when external conditions shift unexpectedly. The strategic management cycle—vision, analysis, prioritization, implementation, monitoring, and adaptation—provides a practical structure for navigating such complexity.

Another essential conclusion is that uncertainty can act as a catalyst for positive transformation. Institutions that embrace adaptability, cultivate strong leadership, and invest in data-driven tools are better positioned to innovate, respond to crises, and sustain educational quality. In many contexts, periods of instability have accelerated digital modernization, encouraged closer engagement with communities and stakeholders, and fostered a more proactive institutional culture. These developments highlight that strategic management is not merely about risk mitigation; it is equally about recognizing emerging opportunities and building the capacity to seize them.

Finally, resilient strategic management depends on the integration of people, processes, and purpose. Universities thrive when leaders communicate clearly, when governance structures support coordinated action, and when institutional values guide decision-making even under pressure. As uncertainty becomes a persistent feature of the global higher education landscape, institutions that develop coherent, responsive, and mission-driven strategic frameworks will be best equipped to fulfill their academic and societal roles.

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