

Resilient Universities: A Conceptual Framework Based on Duchek's Model

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Abstract

This paper explores ways in which universities can enhance their organizational resilience in the face of overlapping global and local crises. Although organizational resilience has been extensively studied in a corporate context, higher education institutions (HEIs) remain under explored despite their crucial societal role. Building on Duchek's (2020) model of organizational resilience, this paper conceptually adapts its three stages - anticipation, coping, and adaptation - to the HEI context. We discuss how the institutional environment shapes and constrains resilience within HEIs, and we contribute by identifying different mechanisms, structures, and tools that HEIs can implement across Duchek's resilience stages.

Keywords: Organizational Resilience; HEI Resilience; Crisis

1. Introduction

Universities are increasingly confronted with overlapping crises, ranging from global shocks such as pandemics to local disruptions including severe budget cuts. At the same time, higher education institutions (HEIs) are bound by strict laws and bureaucratic procedures that constrain fast and flexible responses to cope with crisis. This constrained capacity to cope with crisis threatens educational quality and restricts opportunities for students to experience institutional crisis management in practice, thereby reinforcing uncertainty about the future.

Literature on organizational resilience has increased significantly in the past five years and has mainly focused on organizational resilience as being process and capabilities bound. Organizational resilience has been widely discussed in management literature (Linnenluecke, 2017) and has seen a larger interest and further development since the pandemic (Paeffgen et al., 2024). It has been defined as “the ability of an organization to maintain functions and recover fast from adversity by mobilizing and accessing the resources needed. An organization's resilient behavior, resilience resources and resilience capabilities enable and determine organizational resilience. The result of an organization's response to adversity is growth and learning”

(Hillmann & Guenther, 2021) and is seen as capability and process bound. However, the research concentrates on health institutions and businesses and only very little on HEIs. Given the role of HEIs in shaping societies, we believe there is an urgency to discuss university resilience. With this paper we want to explore how universities can increase their organizational resilience capabilities.

In the literature, the term “crisis” is treated ambiguous: some refer to external shocks, others have used it ambiguously for any adversity that organizations face (Paeffgen, 2023; Williams et al., 2017). In the context of HEIs we refer here to crisis that are larger external shocks. We do not differentiate between local shocks, such as severe budget cuts, or global shocks, like pandemics. Hence, we refer to crisis that affects the HEIs, such as a pandemic, technological disruptions (e.g. artificial intelligence), and also political change entailing severe budget cuts.

In the following we discuss the main conceptional framework of organizational resilience, apply it on a conceptual level to HEIs and propose potential areas for adjustments, taking the external environment with binding legal regulations and bureaucracy as given and fixed.

2. Resilience in Higher Education

The existent literature on resilience in HEIs focuses on individual resilience of students (Brewer et al., 2019; Celbis et al., 2025). Many publications emerged in during the Covid pandemic. A large part of the literature focuses on student well-being (Egan et al., 2022; Price, 2023; Sahrah et al., 2024), and students dealing with stress (Emerson et al., 2023; Nordstokke & Hindes, 2025). Individual resilience of students is linked to better academic performance (Egan et al., 2022) and lower dropouts (Cotton et al., 2017; Emerson et al., 2023).

However, HEI are complex systems (Pinheiro & Young, 2017), where individual resilience of students cannot be seen independent from environmental factors. Pinheiro & Young (2017) argue that individual components of HEIs, such as students, are part of a complex system with different interconnected but partly independent institutional levels. Actors are bound as well by differing external influences and pressures. Any model for resilient universities needs to take these complexities into consideration.

Brewer et al. (2022) did show that staff leadership programs focusing at individual resilience of staff and their practices and behaviors also have a positive effect on student resilience. From a different angle, Sahrah et al. (2024) show that individual resilience of students and their well-being has an influence on service quality of the HEI. Based on the impressive example of Ukrainian universities during the war by Russia in Ukraine, Błaszczuk et al. (2025) demonstrate that not only did students rely on their individual residence for coping strategies but also institutional adoptions played a role. This interplay was the key for the systematic resilience of the Ukrainian HEIs.

Bartusevičienė et al. (2021) and Shaya et al. (2022) are exceptions by applying Duchek's (2020) organizational resilience framework to HEIs context. Duchek's (2020) framework, one of the most widely cited models of organizational resilience, adopts a capability-based and phase-oriented perspective, distinguishing between anticipation capabilities before a crisis, coping capabilities during a crisis, and adaptation capabilities after a crisis (see Figure 1). Both studies employ this framework as an ex-post analytical tool in case study research to assess the extent to which HEIs exhibit organizational resilience across these phases.

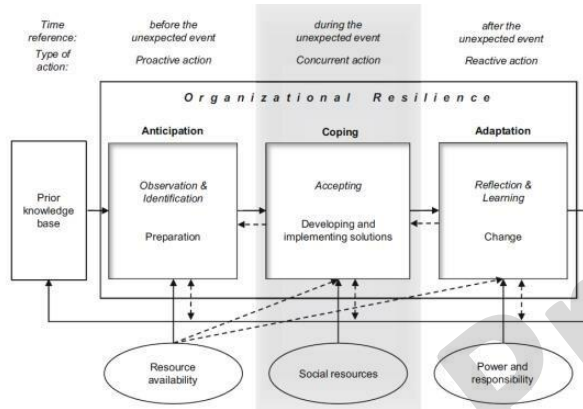


Figure 1: Organizational Resilience based on Duchek (2020)

Our intention with this article is a different one. Given, that HEIs face overlapping crisis, from pandemics to budget cuts, we want to use Duchek's (2020) framework to develop a conceptual model of resilient universities. We aim to elaborate, what are the specific parameters that HEIs need to adapt to ensure that they are resilient organizations.

3. Towards university resilience

Considering HEIs as complex and multilayered systems necessitates the selection of an appropriate perspective. We aim for a practical approach from the inside of a HEI to the outside. This means we take the perspective of a low level of organizational unit, namely a study program within an HEI. With this perspective we accept certain external constraints as given in the mid-term perspective and focus on components that can be controlled internally.

3.1 Antecedents and Drivers

Following Duchek (2020), before the three main stages of organizational resilience there are drivers and antecedents that play an important role. These are an existing knowledge base, resource availability, social resources, capital and a distributed power structure.

The existing knowledge base in Duchek's (2020) model is related to what Pinheiro and Young (2017) call "Requisite variety". It's the variety and diversity of existing knowledge that is an antecedent for anticipation, coping and adaptation of an organization. We assume that most HEIs are interdisciplinary and have some form of existing knowledge base relevant for potential crisis, such as researchers on strategic management, crisis and disaster management, psychology. At the same time, this makes clear that HEIs need to remain diverse and interdisciplinary in their portfolio – in contrast to political pressures for more streamlined and subject specific orientation of HEIs – if they want to be resilient. HEIs need to foster exchange between the different disciplines, i.e. by cross-faculty dialog platforms, cross-faculty teaching approaches, in order to generate value from this existing knowledge base.

The antecedent of resource availability is related to financial and technical resources (Duchek, 2020). These are commonly limited in public HEIs. However, as demonstrated in other research, limited resources, can be counterbalanced with social resources (Dieterle & Duchek, 2023). This would be a valuable approach for HEIs as well.

Social resources, such as internal and external capital do not only increase student resilience, but have the ability to offset other resilience components that HEIs are more disadvantaged in. Hence, HEI should put a strong effort into increasing their social capital. For internal social capital this implies activities to increase community feeling among students in a study program such as events, teamwork and excursions. But also building strong networks and a community of teaching staff within the study program, and with HEI employees and staff in other faculties. For external social capital, intensive alumni work is as essential as strong connection to the industry and potentially policy makers. All these networking and socializing activities take time and are usually only partially benefiting for the career enhancement of the individual professor (Tamir & Machovcová, 2025). This incentive mismatch needs to be considered and potentially countered with incentives such as teaching reductions or awards.

A distributed power structure has been discussed in the literature as antecedent for organizational resilience (Duchek, 2020; Lengnick-Hall et al., 2011). We argue that the distributed power structure should not only be thought of at the level of the university leadership or study program leadership but should include all actors of HEI, most importantly students. We argue that in order to be a resilient HEI, including students in the decision making of their study program and encouraging democratic participation is key. While students in Germany are officially included in the self-governance of HEIs through student council and student representatives in committees, a participation rate among students in HEI elections of below 5% does not demonstrate active engagement. Hence, resilient study programs need to find innovative ways to increase participation of their students in governance. This is discussed widely in the literature of student voice and engagement. Partnerships and awards appear to improve student engagement (Patrick, 2025; Shahabul et al., 2022).

3.2 Anticipation, Coping, and Adaption

Following Duchek (2020), anticipation of is one of the core capabilities of organizational resilience, and hence HEI resilience. Anticipation capabilities entail observation and identification as well as preparation. Literature suggest that crisis management teams (Bartusevičienė et al., 2021) and communication (Lengnick-Hall et al., 2011) are key factors. But, in addition to structural and procedural adjustments, study programs require access to data and adequate data management tools to monitor their environment and to strengthen anticipatory capacity. In particular, dashboards integrating program-specific key performance indicators (KPIs) with external market and contextual data can enhance early detection of emerging risks and opportunities, thereby increasing preparedness for potential crises.

Relevant KPIs may include application and enrollment trends, student retention and dropout rates, time-to-degree, capacity utilization, budgetary indicators, and labor market demand related to graduates' fields of study. When complemented with external data sources, e.g. demographic developments, policy changes, or technological trends, these indicators support scenario-based anticipation rather than reactive crisis management.

Moreover, advanced data preparation enables comparative and similarity-based analyses across HEIs. By systematically identifying comparable study programs or institutions, HEIs can draw anticipatory insights from how similar institutions have responded to emerging challenges, thereby informing proactive adjustments and strengthening their resilience.

Following Duchek (2020), coping capabilities contain acceptance of the problem at hand, and developing and implementing solutions. This is related to ad-hoc coping actions (Bartusevičienė et al., 2021). Communication and social capital play key roles as well. Błaszczuk et al. (2025) demonstrated that student networks and systemized information sharing was crucial in the Ukrainian student context. The internal social capital and distributed power structures create trust and ensure fast and efficient communication. Coping capabilities are also highly related to individual resilience. Hence, offering trainings to enhance student but also employee resilience (Shaya et al., 2022), including well-being and emotional regulation (Błaszczuk et al., 2025; Millar et al., 2025) on a continuous level, is paramount. However, these coping efforts take place within tight legal boundaries: decisions must remain compatible with HEI legislation and external accreditation requirements, which constrain the range of possible responses. As a result, coping strategies tend to rely on individual and collective overwork, as well as informal workarounds and ad hoc reinterpretations of existing rules (Błaszczuk et al., 2025). Again, HEI's need to consider to incentivize such behavior.

The "after" crisis or adaptation stage is often associated to organizational learning, reflection and organizational change (Duchek, 2020). Previous research has shown that HEIs tend to struggle with the adaptation phase. Adaption implies change and change is hard to ensure in environments with tight rules and external constraints. Tamir and Machovcová (2025) showed

that the perspective and role understanding of the academic staff in relation to the given policies are a key component. Pinheiro and Young (2017) argue that HEIs need “slack”, meaning less strict rules and regulations from government bodies in order to be flexible. One such possibility is in-house quality assurance and system accreditation, which allows a certain degree of flexibility and optimizes time management.

HEI laws and regulations and detailed accreditation and quality assurance regimes define the scope of strategic adaptation. For instance, rigid budget lines, and fixed student–staff ratios may limit the ability of HEIs to build slack resources or diversify curricula in adaption to a crisis or in the anticipation of demographic shifts, or geopolitical crises.

4. Conclusion

We develop a conceptional model applying Duchek's (2020) model of organizational resilience to the HEI context. While previous research has already discussed organizational resilience at HEIs ex-post, we apply one of the most used models to the HEI context and argue which actions are connected to each factor in order for a pro-active approach.

We can contribute to a better understanding of how HEIs and study programs as the main functional level can ensure some degree of organizational resilience in a HEI context. However, the adaptation of Duchek's model suggests that public HEIs can be conceptualized as “institutionally bounded resilient” organizations: they exhibit considerable coping capacity and pockets of anticipatory and adaptive capability; despite this, the development of these capabilities is hindered by governance and regulatory frameworks. While legal frameworks, funding rules, and external quality assurance do not simply inhibit resilience; they define which forms of resilience are legitimate and whose resilience is prioritized. This raises the question “resilience for whom and at what price?” and highlights the importance of examining not only organizational capabilities but also the institutional conditions under which such capabilities can be built, exercised, and transformed in the HEI context.

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